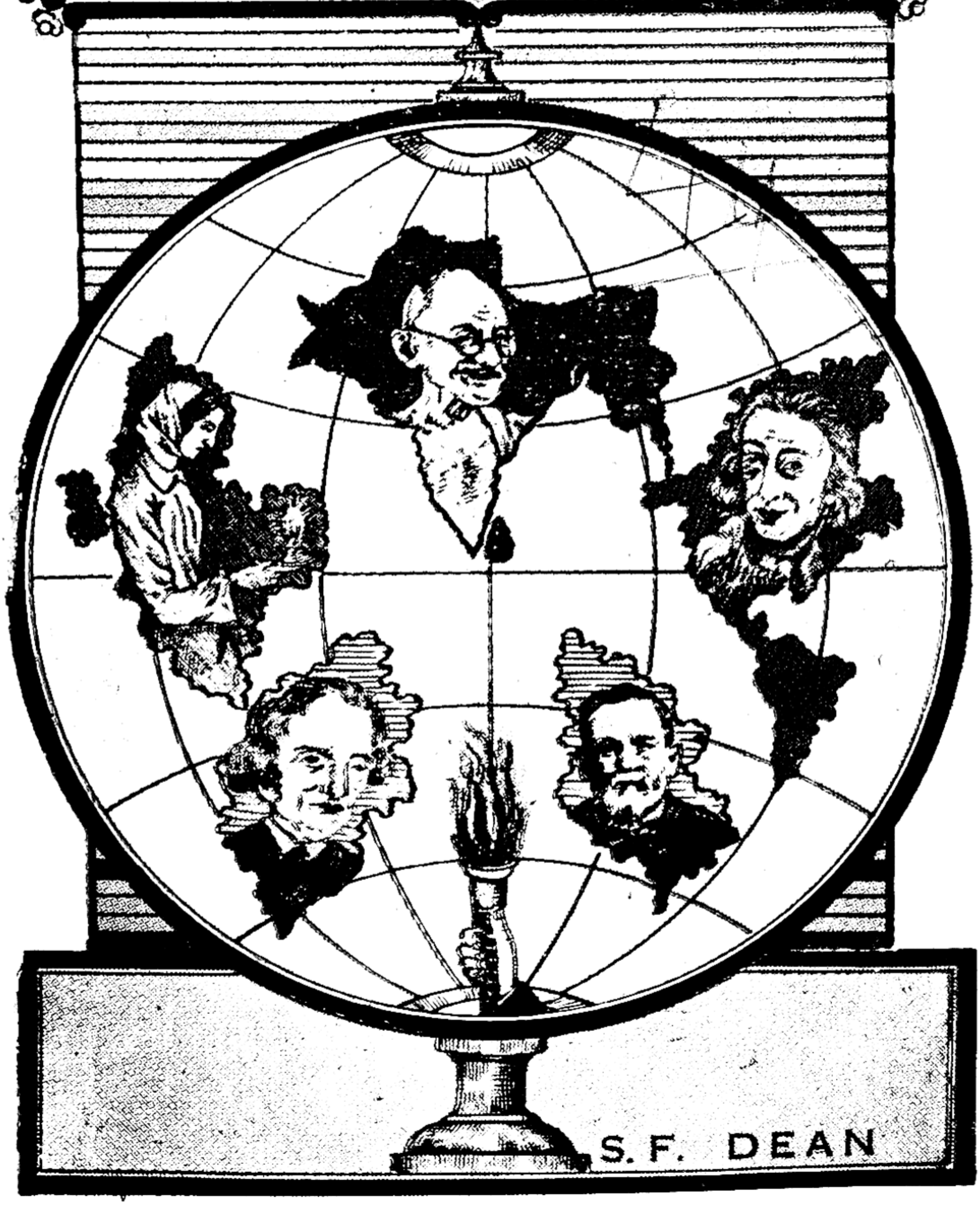
BENEFACTORS *of* HUMANITY



S. F. DEAN

BENEFACTORS
OF
HUMANITY

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PREFACE.

Change is the law of nature. This world of ours, so immemorially old, has been constantly undergoing change ever since its creation. It has come to be what it is through various stages of development. The passage through these stages has not been easy. Man had to face countless difficulties and problems; but by steadfast efforts, sustained by unflinching faith he succeeded in finding means to solve problems and remove his difficulties, though they seemed in the beginning to be insurmountable. The van of human progress has been represented in all ages by a band of selfless and devoted workers who have tried, each in his own way, to fight evil and mitigate human suffering. Who can deny that but for their selfless and pioneering work we would have remained today in the darkness of the barbaric age ? These noble-hearted pioneers by their invention and social service have helped to lessen to a great extent the miseries of earthly life

which by no other means could be lessend in the former ages. We call them the benefactors of humanity. They belong to the race of immortals. They have no national frontiers, but have sprung from the family of Man, transcending the boundaries of colour, creed or race.

It, therefore, behoves the youngmen of the present generation to study and emulate the lives of these men of character and outstanding abilities. 'As one light enkindleth another, so nobleness, nobleness.' For it may be that by following their footsteps some of us may yet take the torch from their hands and keep the march of human progress uninterrupted. 'Lives of great men all remind us, we can make our lives sublime.'

Author.

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BENEFACTORS OF HUMANITY

CHAPTER I

GANDHIJI (1869-1948)

War brings fortune[1] to a lucky few, but plunges the common man into lasting[2] misery[3]. Loss of life casts a lifelong gloom over the homes of blooming youths. They are sacrificed simply to satisfy the lust for power of a single monarch or a handful of ambitious persons. It brings death, scarcity, high prices, famine and sickness. War is a monster which must be fought against persistently and courageously to bring about the blessings that peace confers on humanity. For ages, Indian saints have preached against war but could not achieve peace. Mahatma M. K. Gandhi, most affectionately called *Bapu* by his countrymen, has practically demonstrated to the worid the effectiveness of achieving high ideals by *Non-violence*. He secured freedom of forty millions of people without bloodshed. It is a singular feat in history. It is a pity, his life was cut short by the pistol shots of a depraved[4] youth of his own country, before his experiment could be applied to achieve world peace, for which men should strive nobly. Gandhiji has given to the world his gift of the cult of '*Non-violence*'

We call Gandhiji 'Bapu' out of our great reverence for him. The ancestors of Gandhiji were a family of Banias. They held a high position in the States of Kathiawar. Mahatma Gandhi's father Karam Chand Gandhi was popularly known as Kaba Gandhi. He was Diwan of Rajkot. He got little schooling, but gathered much practical knowledge and wisdom by his contact with people of all classes.

Mohandas Gandhi--that is Gandhiji's real name--was the fourth and youngest son of Kaba Gandhi by his fourth wife. He was born on October 2, 1869, at Porbandar. His mother was a very pious and religious lady. She made Gandhiji strictly truthful and religious, under her influence, in his early life, and taught him lessons which he never forgot. She fasted frequently and Gandhiji learnt fasting from her. The family stayed at Porbandar until Gandhiji was seven. Then they moved to Rajkot where his father was to take up the post as Diwan. Gandhiji did not distinguish himself as a student. He found it difficult to learn the multiplication tables. But he was never late for school. He never told lies and never copied from a companion's note-books.

The early life in his home had a deep influence on Gandhiji. The old nurse Rambha taught him fearlessness. The talks on religion among the visitors made Gandhiji respect the religious beliefs of others.

Gandhiji was hardly thirteen when his parents proposed his marriage. Now you do not like the


BORN: 2ND OCT. 1869
DIED: 30TH JAN. 1948

idea of marriage at such an early age, but in those days, early marriage was a common practice. His bride, Kasturba, though sweet tempered and pretty, was illiterate, for girls received no schooling in those days. Training in household tasks was considered enough for them. The marriage was celebrated with all the usual pomp and show of an Indian well-to-do family.

Gandhiji's marriage interrupted his studies, but after a year's break he resumed his studies at a high school. He passed his Matriculation and joined Samaldas College in Bnavnagar. He did not feel at home there and discontinued his studies. An old Brahman friend advised that he should be sent to England to study law. After a great deal of discussion and hesitation it was decided that he should go. He sailed from Bombay in September, 1887, leaving behind his pretty wife and a son, born a few months earlier.

Landing at the English port of Southampton, he journeyed to London and soon began to study law. He found lodgings in the house of a widow who lived with her two daughters. For a few months Gandhiji was charmed by the pompous[6] and luxurious life of London. He wasted money on rich clothes, and on lessons in music and dancing. He realised his folly in a short period and became very thrifty. He began to live in a rented room and cook for himself. He did the washing himself. He maintained an account of every penny he spent. He studied very diligently and after

four years of study he qualified for the Bar and soon sailed for India.

In London, he met many members of the Theosophical Society[7]. Mrs. Annie Besant[8] and Madame Blavatsky[9] persuaded him to take interest in religious studies. He studied not only the scriptures of Hindus but also of Christians. He was deeply impressed by the *sermon on the mount*[10] which preaches returning good for evil. He made it a rule of his life and practised it implicitly[11].

After the completion of his studies, he returned to India and set up practice, first, at Bombay, and then, at Rajkot, but without much success. He felt very much downcast and sad. A firm of merchants from Porbandar, who had a branch in South Africa, invited him to help in a law suit in the court at Durban, a seaport. They offered fair terms which Gandhiji accepted.

In April, 1893, he sailed for South Africa for a year. Shortly after his arrival he attended a court with his turban on his head. The magistrate stared at him for a few minutes and then ordered him to remove the turban. Gandhiji felt insulted and walked out of the court rather than take off his turban. On another occasion he was turned out of a compartment of a train for the simple reason that an Englishman did not like to travel with an Indian even though the latter had bought a first class ticket. Such a cruel treatment was meted out to so highly educated Indians simply because they belonged to a race with dark skin.

Poorer classes of Indians, for instance labourers, were treated more mercilessly.

The suit of the merchants was settled out of court and Gandhiji was preparing to sail for home. At a farewell party given to him at Durban, some body pushed into his hands a newspaper and drew his attention to a report that the Natal Government was about to take away the Indian franchise. At the request of some friends Gandhiji agreed to stay there for some time more to fight against such laws. He set to work the very next day. He studied the condition of Indians there closely.

In 1894, he founded the Natal Indian Congress and collected funds for it. For two years he worked with great devotion. In 1896, he returned home for six months. No doubt he was among his kinsmen but his heart was with the suffering Indians of South Africa. He wrote a booklet about the cruel treatment meted out to Indians by Europeans. Thousands of copies of the pamphlet were despatched all over India and abroad to arouse sympathy for his brethren in South Africa. He got into touch with prominent members of the Indian National Congress and made public speeches at Bombay, Poona and Madras. People in India came to know much about his work in South Africa and greeted him everywhere with great enthusiasm. He became a national hero.

News of these activities of Gandhiji made the Europeans in Natal very angry. When Gandhiji with his family and 800 other Indians reached the

seaport of Durban, they were not allowed to land on the pretext that they might be carrying the infection of plague which was then raging in Bombay. They had to remain on sea for twenty three days before they were allowed to land.

But worse was to follow on landing. No sooner did Gandhiji land than a mob of European youths pelted him with stones and rotten eggs. They would have killed him had not a kind European lady who happened to be the wife of Mr. Alexander, Superintendent of Police, come to his rescue. On receiving the report, Mr. Alexander sent a posse of police who took him safely to his friend's house. The Superintendent of police came there suspecting some further mischief. He found that a mob had collected. They were shouting "We must have Gandhi!" The clever superintendent kept them busy in his jovial talk while Gandhiji escaped in the guise of a policeman. Soon the superintendent told the boys that their victim had escaped but they would not believe. Two or three of them went into the house to see for themselves and then they went away. But Gandhiji would not take any legal action against them though the Government was willing to arrest them if Gandhiji pointed them out. He felt that the youngmen would be sorry when the truth came to be known.

This noble behaviour of his made a deep impression on Europeans who now blamed the crowd. Thus Gandhiji was gentle and meek to his enemies and believed that truth triumphs.

In 1899, a dreadful war broke out between the British and the Boers in South Africa. In spite of the cruel and heartless treatment of the British, Gandhiji felt it his duty as a British subject to help the British but he was not a man to take part in the destruction of life. He organised an ambulance unit and with a band of 1100 devoted men rescued the wounded soldiers even amidst the booming of guns. The brave work won a great praise for Indians. Better still it brought the distinction of caste and creed among Indians to an end. The Hindus, Muslims and Christians treated oneanother as brother Indians.

After the war, Gandhiji came back to India and set up practice as a barrister in Bombay. Besides his professional business, he did a great social and political work. He had been in India for only a few months when he received a call from Indians in South Africa to guide them in the struggle against the harsh laws that the Government was making against them. He could not refuse and sailed for South Africa.

After the defeat of the Boers in the war, the British rulers of Transval made many harsh laws against Indians. There was a strict control over their immigration. They proposed a registration law which not only put strict control over the movements of Indians but made the registration of the finger prints of every Indian compulsory. Indians felt very indignant. Gandhiji started a newspaper in Natal to voice the grievances of

Indians in South Africa. It was called the *Indian Opinion*.

In September 1906 was held a very momentous meeting to consider what steps they should take to fight against the harsh law which they called the **'Black Act'**. Three thousand Indians of different religious sects took an oath to resist the **'Black Act'** to the last but only by non-violent means. Gandhiji had no name for this movement. He offered a prize in the *Indian Opinion* for a suitable name. Shri Magan Lal Gandhi won the prize for the word *Sada-grah* which Gandhiji altered to *Satya-grah*. Thus, the great idea of *Non-violence* was born.

The struggle against the **'Black Act'** continued for long. In the meantime, the South African Supreme Court delivered a judgment that only Christian marriages registered by the registrar were valid. It meant that the marriages of all Indians were invalid. Indians were very indignant.

Shortly afterwards, another law forced labourers in coal mines to pay a tax of £3 each. There was a great agitation, the labourers went on strike. Gandhiji led a vast mass of thousands of labourers into Transval. Large numbers of them were arrested. Gandhiji was separated from them. The poor labourers were herded back to Natal, and tortured to resume work. They were even shot at. Yet the labourers remained peaceful and did not commit a single act of violence. This roused the world opinion against South Africa. At length the famous

Gandhi Smuts Agreement was signed and took the form of the Indian Relief Act which redressed the principal grievances. This was the first great victory of the non-violent Satyagrah.

During this period of his stay in South Africa Gandhiji achieved two more great things. He purchased a piece of land and formed a colony of people at Phoenix, not far from Durban. Here men, women and children lived together and shared in the work of the farm. They ground wheat and made bread. All were equal in position and were willing to do any work that was required of them. The *Indian Opinion* which played so important a part in the South African struggle was printed here.

Zulus were a race of primitive African people whom their British rulers forced to pay certain taxes. They broke out into a rebellion. The Government did their worst to put them down. Some Zulus were on the side of the British also. Gandhiji organised an ambulance unit to nurse and help the dark skinned wounded people whom no white man would like to touch.

Here, in South Africa, Gandhiji undertook his first fast. Two persons of the Phoenix farm behaved very badly. Gandhiji was shocked by their wickedness. He did not scold them but felt that he as their teacher was at fault. He had failed to mould them properly. He undertook a

fast for seven days. Thereafter, he took one meal a day for several months. The inmates were so much moved by Gandhiji's sacrifice that they hated the very name of sin.

About the middle of the year 1914, Gandhiji sailed for England. By the time he landed on English soil the Great War had broken out. In England, he orgainsed an ambulance unit of Indians. Shortly afterwards, he fell ill and returned to his motherland.

Gandhiji found another work after his recovery. After a bad harvest, the peasants of Bihar were in a bad way. All the same, the Government raised the land revenue which the peasants could ill afford to pay. Gandhiji orgainsed the peasants and at length reached a compromise. This struggle brought the poverty and backwardness of the village folk to the fore. Gandhiji wanted to do something to show the way to the villagers. He hit upon a plan to provide a gainful employment to millions. He wanted Indians to learn spinning and weaving to save money that went out of India to buy cloth. He founded the *Satyagrah Ashram* at Ahmedabad. He collected twenty-five people who took a vow to lead a pure and simple life of service to others.

He took a Harijan family also. There was much opposition, but Gandhiji persisted as he considered justice was on his side. The members of his Asharm did wonderful work. They visited

villages and taught the peasants to improve themselves in every way.

Gandhiji had been helping the British in their war. In return for the services and sacrifices of his country, he expected that the British would grant India complete independence. He was disappointed, for instead of independence, there came harsh laws like the Rowlatt Act. He felt convinced that a non-violent rebellion all over the country would break the British power in India. He started the civil disobedience campaign against the Rowlatt Act. People could not remain non-violent. They committed several acts of violence. Government, on the other hand, declared martial law in the Punjab. The notorious *Massacre* of *Jallianwala Bagh* followed. Gandhiji was shocked by acts of violence on either side and called off the campaign.

The next opportunity to start a non-violent campaign came in March, 1930. A few months earlier, the Indian National Congress had declared Purna Swaraj or complete independence as her goal. To achieve this Gandhiji started a campaign of civil disobedience against the Salt Laws. He marched with his band of followers to Dandi at the sea coast and, on the 6th April, 1930, by picking up a piece of salt from the coast, he broke the Salt Laws. He was arrested on May 5. His arrest was followed by a *Hartal* in all the principal towns of the country. Thousands of people broke the Salt Laws and were put behind the bars. The campaign ended in a victory for non-violence, for a pact known

as the Gandhi–Irwin Pact, was signed between Government of India and Gandhiji on behalf of the Indian National Congress.

A few months later, Gandhiji attended the Round Table Conference in England. The thorny communal question could not be solved. Mr. Ramsay Macdonald, the then Prime Minister of England, announced his Communal Award. Gandhiji was horrified at this. On his return to India he was arrested and confined in Yarvada Jail. Gandhiji undertook a fast unto death to prevent this rift between Hindus and Harijans. The fast came to a successful close by the signing of the *Poona Pact*. It directed the energies of high caste Hindus to the upliſt of their depressed brethren, venerably called Harijans by Gandhiji. The uplift of Harijans ever since remained the consummate desire of Gandhiji, and he went on working for their welfare to the end of his life.

At the outbreak of the second world war Gandhiji issued an appeal to Britain to accept the method of non-violence. He demanded the recognition by British Government of the right of Indians to preach against aid to them in their war. Then came the civil disobedience movement. About twenty five thousand congressmen went to jail during the year of the campaign. Gandhiji was arrested on August 9, 1942, after the passing of the 'Quit India' resolution. His arrest threw the

country into a great trial. Thousands went to prison.

In the meantime the labour party came into power in Britain. Soon after coming into power, Mr. Atlee, the Prime Minister, announced his Government's willingness to concede India's independence and to help her frame her constitution. On February 20, 1947, the British Government announced their decision to quit India. The Muslim League made an attempt to seize power in Muslim majority provinces. Violence and lawlessness broke out in East Bengal, the Punjab, North Western frontier Province and some other provinces. Gandhiji toured the worst affected province of East Bengal, preaching his gospel of non-violence and amity. Ultimately the country was partitioned into two self-governing dominions of India and Pakistan. Gandhiji achieved freedom of India by non-violence, a singular feat in history.

Gandhiji undertook a fast early in 1948 to bring peace to his country. It lasted five days.

Gandhiji held prayer meetings every evening. Gandhiji had set out for the prayer meeting as usual on January 29, 1948. On his way he was shot dead by a fanatical Marhatta youth, Nathuram Godse. The shocking news was broadcast to the world. It plunged the whole country into deep mourning. Flags of almost all the countries were flown half-mast as a mark of respect to the memory of the departed soul. Messages of condolence[16] and sympathy poured in from all

corners of the world. The cremation took place next day at Rajghat. The ashes of the great leader were ceremoniously cast into all the rivers of the country. Rajghat has since then become a place of pilgrimage. Foreign visitors to Delhi pay a silent homage to his revered memory.

Gandhiji was an embodiment of love, piety, truth and selfless service to humanity. His greatest gift to humanity is his *gospel of non-violence.*

GLOSSARY OF WORDS

1. Fortune—Wealth, profit in war contracts.
2. Lasting—that which continues for a long time.
3. Misery—Suffering of body and mind.
4. Depraved—misguided.
5. Diwan—finance minister.
6. Pompous—adjective from 'pomp' means show. showy.
7. Theosophical Society—An association of men interested in spiritual and philosophical discussions.
8. Mrs. Annie Beasnt—a famous English lady deeply learned in spiritual matters.
9. Madame Blavatsky—a famous Polish lady

well-known for her feats of miracle-making power.

10. Sermon on the Mount—in the Bible, it is mentioned that Jesus Christ preached a great lesson which is known by this name.

11. Implicitly—impliedly, unquestioningly.

12. Guise --dress.

13. Immigration--to move into a country from another.

14. Notorious—infamous.

15. Massacre – wholesale killing of men.

16. Condolence—words of sympathy to a man who has lost someone by death.

EXERCISES

1. Describe the history of the word *Satyagrah.*

2. Give a short account of the first victory of *Satyagrah* in South Africa.

3. Give a brief account of the service rendered by Gandhiji to his country.

4. British rulers of India took Gandhiji for an enemy. Is that right ? If not, cite some incidents to prove that he was friendly to them.

5. What is Gandhiji's gift to humanity ? Explain it clearly.

6. Briefly describe the attack on Gandhiji at Durban.

7. Use the following in sentences of your own :—

Demonstrate, cut short, strive, to distinguish oneself, pomp and show, to maintain an account, to interest in, set up, for instance, organise, rescue, struggle against, to voice a grievance, to pay a visit to, to a fault, to take a vow, in return for, call off, to put behind the bars, to make, an attempt, as a mark of.

Chapter II.

LOUIS PASTEUR

(1822-1895.)

A Frenchman discovered that germs in the air cause diseases. His discovery has enabled physicians to combat diseases more successfully. By his ceaseless toil and patient research, he found cures of several diseases which formerly carried off millions of human lives.

Louis Pasteur was born in 1822, two days before Christmas, at Dole, Jura, in France. His father had been a sergeant-major in Napoleon's [1] army, but had later established himself as a tanner[2].

In his early life, Pasteur loved countryside. He made drawings and painted the portraits of his parents and friends. At the early age of sixteen he realised that there was a greater and better work ahead.

He received his early education at Arbois, to which place his father had shifted shortly after his birth. At the age of sixteen, he was sent to a school in Paris, the capital of France. Homesickness and loneliness broke down his health and he yearned for his home. Shortly afterwards he went to the *Royal College of Besancon*, took his degree of 'Bachelor of Letters' after two year's study and joined the staff of the college as an assistant Mathematics master. Two years later he gained his

degree of 'Bachelor of Science.' For some time, he studied chemistry under a great scientist J.B.A. Dumas at Sorbonne. In 1848, he was appointed Professor of Physics at Dijon, but shortly afterwards he shifted to Strasbourg, where he taught chemistry. "Work" was his constant inspiration and here he began his researches which had so far baffled human endeavour.

Here, at Strasbourg, took place one of the happiest events of his life. On his appointment he, of course, went to pay a visit to the Rector of the Academy—M. Laurent. The pretty young girl, Marie Laurent, captured the heart of the young professor. The visits that followed brought them into closer contact. Not long afterwards, in a letter to her, he proposed to her. She refused to give an immediate answer. In one of his letters Pasteur wrote to her, "Time will show that under this cold and shy exterior there is a heart full of affection for you." She accepted him and they were married on May 29, 1849.

Their married life was very happy. His wife was devoted to him. He was, often, so taken up with his experiments that he frequently forgot to attend even important meetings. His devoted wife—Mme. Pasteur—had to remind and get him ready in time. She was not only an incomparable companion to her husband but a collaborator[3] also.

In 1854, he became Professor[4] of science at Lille, which is a centre of brewing industry of France. Once he was invited to go over to a

brewery. He was given two vats—one containing sound beer and the other containing unsound. For a pretty long period Pasteur studied the problem of fermentation. After ten years of persistent experiments he came to the conclusion that germs in the air were responsible for turning the beer[6] bad. He announced his discovery in 1864. It is this theory of his that revolutionized chemical as well as biological science and helped scientists and physicians prepare cures for so many of the fell diseases that prey upon mankind.

In 1865, the French Government made a request to Pasteur to investigate the cause of disease among silk worms. The disease was threatening the whole silk industry of the country. He went to the south for the purpose of studying the disease on the spot. After three year's labour he succeeded in isolating the germs of two diseases and discovered means of protecting the worms. Thus, not only did he save the industry from ruin but made it flourish also, bringing employment to so many of his countrymen.

He now firmly believed that many diseases were caused by bacteria. In 1877, he began his researches on *anthrax* and after three year's patient research demonstrated to the world the whole history of the disease.

The poultry industry[5] of France was threatened with ruin by a disease called chicken cholera. It soon engaged the attention of the great scientist. In a short space of time, he isolated the germ and

prepared a medicine which he injected into the fowls and made them immune from the disease. Thus, the three great industries of the world—brewing, silk-worm rearing and poultry farming—owe him a debt of gratitude.

But the greatest service of the scientist to humanity was his discovery and the use of a serum as an antidote[7] to the disease—*hydrophobia*. This fell disease is caused by the biting of a mad dog. Though the sufferer least suspects the disease and the wound seems to have healed up, yet he experiences an intense thirst. In fact, the very sight of a liquid makes his whole frame shiver. Finally, after two or three days of great suffering, the patient dies a painful death.

In order to rid humanity of this terrible malady, Pasteur had to take a great risk to his own life. He had to keep kennels of mad dogs which he handled fearlessly. He was so eager to isolate the germ of *rabies* that on one occasion he actually sucked the saliva of a mad dog through a tube. Pasteur believed that the mad dog transmitted the disease through the saliva. He carried on his humanitarian work till, at length, he invented a serum which when inoculated into a recently bitten dog cured it of the disease "Would it succeed on human beings ?" said Pasteur to himself. "Why not ?" rose the faint "inner voice" from his heart. He waited for an opportunity to test it practically.

The opportunity came at last. A child, Joseph Meister by name, was bitten by a mad dog. He

was brought to the hospital. The doctors despaired of his life. Pasteur decided to try his cure which had succeeded so admirably on dogs. For nine days the scientist injected his serum which produced encouraging results. After three weeks' treatment, he declared the patient 'out of danger'. However, the child had to stay in the hospital much longer. He walked out of the hospital after three months and three weeks, completely cured. As a result of his discoveries the world has got rid of the terrible disease. Doctors have saved millions of lives and will continue to do so.

This success won Pasteur an undying fame. Great honours were heaped on him. At the *Academie Francais* the chair of the famous Joseph Littre was offered to him. The learned societies of the world gathered in Paris on December 27, 1892, to celebrate Pasteur's jubilee. The eminent scientist, Lord Lister, paid him a tribute on their behalf. In the midst of applause of every-one present, Lister embraced Pasteur. Both surgery and medicine recognise today the debt they owe to Pasteur.

Pasteur was a simple man of tireless energy. He continued his humanitarian work till he was too old to do any active job. He retired to his estate and spent his last summer there. Finally, on September 28, 1895, he breathed his last in peace. Someone leaned over his bed to offer him a cup of milk, but he said, "I cannot" and lay down with his eyes closed. He closed his eyes on the world and opened them no more. Thus

passed away in peace a great benefactor of humanity.

Pasteur's father who was a soldier had fought battles of France on the battlefields, but Pasteur fought those of humanity in the laboratory. He brought a great glory to his country and made himself immortal, earning the gratitude of the human race.

Among his sayings there is one which has become famous. He said---

"Three things—will, work and success - cover the whole of our life. *Will* opens the door to brilliant and happy careers, *work* crosses the threshold, and, at the end of the journey, *success* crowns our efforts." This saying, when put into practice, will make any nation great and strong.

GLOSSARY OF WORDS

1. Napoleon—a great Corsican General who became President of French Republic and later Emperor of France. Napoleon fell from power in 1815.
2. Tanner—one who works in leather.
3. Collaborator—one who associates in work with another person.
4. Professor—loosely speaking, one who teaches in a college. Actually it should mean a man who is in complete charge of a subject in a university. The head of the department.

5. Poultry industry—the industry of keeping and raising fowl, chicken, eggs etc.

6. Beer—a kind of wine obtained by fermenting organic matter.

7. Antidote—the medicine that opposes the disease.

8. Serum—a kind of watery substance that is in the blood of man and animals.

EXERCISES.

1. Reproduce briefly the important events of Louis Pasteur's life and draw the moral that can be learnt from it.

2. What was the famous saying of Louis Pasteur ? Apply the truth of that saying to his own life and show that it was not a vain statement.

3. Who is a benefactor of humanity ? State what service Pasteur rendered to humanity.

4. Mention *at least* two outstanding virtues that Pasteur possessed—virtues which you consider to have been decisive in his case.

Chapter III.

EDWARD JENNER

(1749-1823)

Smallpox is a fell[1] disease. Its attack is sudden. It is accompanied by a very high fever which saps the energy of the patient, and reduces him to a mere skeleton. In many cases, it proves fatal. Even if the patient survives, he or she is disfigured for life. The scars are left permanently on the face and body. Now-a-days you find vaccinators going from house to house to vaccinate[2] infants for the first time within a year of their birth. You might recollect when you were vaccinated last. This practice of vaccination to give immunity from smallpox is the result of the patient and persistent labour of Edward Jenner, a benefactor of humanity, who has almost stamped out this fell disease from all parts of the world.

Edward Jenner was the son of a Vicar[3] of Berkley in Gloucestershire, England. He was born on May 17, 1749. His father died when he was six years old. In his boyhood he developed a great love for natural history. He could recognise the cry of every bird, and name any plant by the road-side. His observation was very keen. His love of nature made him a budding poet. He composed beautiful verses. But these pursuits did not last long.

Jenner abandoned poetry and began to study surgery under Dr. Daniel Ludlow, a surgeon of Sodhbury, near Bristol. During this time he came across cases of smallpox and devoted his attention to find out the causes of the fell disease. Once he happened to overhear a country girl remark, "I cannot take smallpox for I have had cowpox." He inquired into this and found a belief among farmers that whosoever caught cowpox was immune from smallpox. Cowpox is a disease common among farmers. It is caught from sores on the udders of cows. Dairy maids often catch the disease. Jenner consulted his medical contemporaries but they could not add anything to his knowledge. Jenner, however, believed that there must be some foundation for the belief.

From Sodhbury, Jenner shifted to London. He studied and practised under a celebrated physician, John Hunter. Here, also, Jenner continued his inquiries about smallpox which seemed to reach no nearer completion. In 1773, he returned to his native place, Berkley, to start independent practice. He was always on the look out for information about cowpox and smallpox. In 1780, at last, he discovered that there were two kinds of cowpox and one of them was responsible for immunity from smallpox. He became a fellow of the *Royal Society* that year. At length, after more than twenty years of research and study, on May 14, 1796 he made his first experiment. He inoculated an eight year old boy, (*Jimmie Phipps*), with lymph (matter from cowpox vesicles) on the hands of a

dairy-maid (*Sarah Nelmes*). About a month and a half later, on July 1, he inoculated the boy with germs of smallpox. The contemporary medical men criticised Jenner ruthlessly but Jenner did not pay much heed. The boy did not develop smallpox. Jenner was successful. He proved by experiment that immunity from smallpox was possible. You can well imagine the joy of Jenner. You must appreciate the sacrifice of the little boy (*Jimmie Phipps*) who submitted to inoculation. Few of you would have offered yourself for the experiment.

Jenner's success would have made him a man of great wealth. Sir Falter Farquhar, it is said, asked him to keep the discovery a secret and make money by it. He counselled that Jenner could prove it to medical men of character who would recommend it to the public and he would easily make £10,000 a year thereby. But Jenner had determined to give the secret of his discovery to the world. His motive was not mercenary. He published two books, one in 1798 and the other in 1800.

This discovery was not hailed with applause, for the opposition was formidable. Some medical men regarded vaccination as a dangerous practice. On the contrary, there were others who began to sell vaccines. The village fair grounds were infested with quacks. False and unscrupulous attacks were made against Jenner. A rumour was set afloat that Jenner had given up vaccination. In course of time fears of people were overcome and the general

practice of vaccination became popular.

Money was not a consideration with Jenner. He offered free vaccination to the people who were so poor that they could not pay his fee. Every day hundreds of people gathered at his door, desiring to be vaccinated. His dicovery was recognised by the Parliament of England which gave him a grant of £10,000 for giving publicity to his discovery. He was presented to the King, the Queen and the Prince of Wales whose encouragement materially aided the speed of vaccination in England. In 1806, the parliament gave him a further grant of £20,000. Jenner spent this sum on setting up an institution called the *National Vaccine Institution.* Now there are hundreds of such institutions spread over all the countries of the world. Not only do they manufacture vaccine against smallpox but also prepare many other vaccines to cure several other diseases. All this we owe to Jenner, the discoverer of vaccination—"the vaccine clerk of the whole world," as he himself said.

Jenner's fame spread far and wide. It crossed the shores of his country. Vaccination was widely practised in France. Emperor Napoleon became a patron of the institution set up for its spread.

A curious story is related in this connection. When Jenner came to know of Napoleon's patronage of his discovery, he once wrote to him a petition praying for the release of some unfortunate English

prisoners of war. The letter was forwarded to Empress Josephine, wife of Napoleon. She pleaded the cause of the prisoners simply because Jenner had made a request. The Emperor would not agree to the release of the prisoners but when the Empress told him that she had received the petition from Jenner, Napoleon exclaimed, "Ah! we can refuse nothing to that name." And the prisoners were released. The two great men had never met. It was Napoleon's regard for the great work of the scientist that procured the release of the prisoners. Likewise Prisoners were released also in Mexico and Austria.

The domestic life of this great man of science was very simple. He had married Katherine Kingscote, the daughter of a Gloucestershire gentleman. She was a very mild and gentle lady and exercised a healthy influence on her husband. She also set up schools for teaching *Scriptures* to the poor. The lady was always delicate in health and this caused a constant anxiety to her husband.

Jenner's life grew very unhappy. His eldest son died in 1810. This caused him a life long grief. Five years later Jenner's life grew dark on account of the death of his wife who was always very delicate.

A year before his wife's death Jenner left London for good and returned to Berkley. He resumed his old study of birds and plants. He presented his last paper on *'the Migration of Birds'* to the *Royal Society*[8] in 1823. A few days later on the morning of January 24, 1823 he was found

unconscious in a state of apoplexy on the floor of his library. He had a fatal attack of paralysis. His right side was completely paralysed. The next day this benefactor of humanity, a great poet and lover of Nature, passed away. The world owes him a deep debt of gratitude and a universal practice of vaccination is a silent tribute to his memory. In 1858, a statue of him was erected by public subscription in India.

GLOSSARY OF WORDS

1. Fell—terrible. Diseases like cholera, smallpox and plague which carry off thousands of men in a week are called fell diseases.
2. Vaccinate—to inject cow's vaccine or serum in the blood in order to prevent smallpox.
3. Vicar—churchman.
4. Mercenary—a motive is said to be mercenary when it is inspired by the love of monetary gain.
5. Procured - secured.
6. Release--liberty, freedom.
7. Scriptures—religious books.
8. Royal society—the great society of world famous scientists. This society was founded in the reign of Charles II. Dr. Sir S S. Bhatnagar is a fellow of the Royal Society.

EXERCISES.

1. Reproduce briefly the life of Edward Jenner and show that besides being a scientist, he was also a man full of human sympathy.

2. Why was Jenner held in universal regard? Discuss in your own words, the importance of his invention.

3. What lessons do we learn from Jenner's life ? What was the guiding passion of his life and how did he succeed ?

4 What similarities do you notice in the lives of Jenner and Pasteur ?

CHPTER IV.

ISAMBARD KINGDOM BRUNEL

(1806—1859)

All of us are familiar with railways. Our country is now covered by a network of railways. The great rivers have been spanned by bridges. Towering and seemingly unyielding mountains have been pierced by tunnels through which motors and trains pass. They take us to the tops of hills where delightful health resorts welcome us. Splendid harbours have been built and ships constructed to connect countries separated by seas stretching over thousands of miles. All these changes did not happen by miracle. They were the result of man's foresight, sacrifice and industry. We owe a great debt to the pioneers whose genius and collective foresight rendered the world better than what they had found it. Among them the name of Isambard Kingdom Brunel stands eminent.

In the dark days of the *French Revolution* the persons who sympathised with the Royal House of France were terribly persecuted. Sir Marc Isambard Brunel was one who barely escaped with his life to England and settled in that country. He became a great civil engineer and got the rights of citizenship of the land. He won great renown for his work.

Isambard Kingdom was born to *Sir Marc Brunel* on April 9, 1806, at Portsmouth. Early in life he showed a great talent for drawing. During his studies at a school in Hove, while he was only a boy of fourteen, he drew a complete and accurate plan of the whole town. Few of you who are about the same age can do so.

After a few years of study in England he was sent to the College of *Henri Quatre* in Paris. The college had a great reputation for mathematical teaching. *Sir Marc* wanted his son to be an engineer like himself. Having spent two years of diligent studies at the college, young Brunel returned to England and received technical training. In 1823, at the age of seventeen only, he joined his father's office as an employee. That year his father planned the *Thames Tunnel*. He was engaged in it and later he was made resident engineer. He made his mark as a man of great devotion and skill. His work at the *Thames Tunnel* gave him a lot of practical experience.

In 1829, the government of the country planned to build a bridge over the Avon at Clifton. Great engineers submitted designs for it. Brunel submitted one but it was rejected on the advice of Mr. Telford, a great builder of bridges and the founder of the *Institute of Civil Engineers*. Two years later he submitted another which was accepted. Others including that of Telford himself were rejected. He was appointed engineer of the work in 1836 when the actual work was started.

Earlier came a few more triumphs of his skill. He was appointed engineer to Bristol Docks. He carried on the dock and harbour works at various places. In 1833, the government proposed a railway —*the Great Western Railway*—in the country. Applications for the post of engineer for the proposed railway were invited. Brunel became a candidate. A strange incident occurred on this occasion. Brunel heard that the selection committee had decided to give the position of the engineer to one who would tender the lowest estimate for the work. Brunel was not prepared to sacrifice value for cheapness. He made a request that his name should be withdrawn. The selection committee preferred value to cheapness. On March 7, 1833, he received his appointment at a handsome salary of £2,000 a year.

Brunel had a hard task before him. He devoted himself to the task diligently. He carried on the whole survey. At last the *Railway Bill* was presented to the Parliament. George Stephen, the inventor of the Locomotive Engine, supported Brunel before the committee that was to report on the bill. The first bill was, however, rejected, much to the disappointment of Brunel. But subsequently Brunel's efforts were crowned with success. The scheme for the railway was put into execution. Brunel had to supervise the whole work. In his diary he writes, "I am rarely much under twenty hours a day at it." Thus, through his ceaseless efforts, was built one of the finest work. A great many difficulties came in his way but he surmounted

them all with his foresight and energy. It was during this enterprise that he cut a two mile long tunnel through a mountain. He was consulted when other lines were built.

Not only did Brunel cut lines of communication on land but also brought about a revolution in the means of communication by sea. Simultaneously with the construction of the *Great-Western Railway* he designed and supervised the construction of a great steamship, "*The Great Western*". When completed, it was the biggest vessel of the day, about thirty feet longer than the biggest vessel built heretofore. She was two hundred and thirtysix feet long. She sailed on her maiden voyage in 1838, when she crossed the Atlantic Ocean in fifteen days only and thus set up a record. A regular steamer service started between England and America. Later he made improvements in the steamship. As a result of these improvements, the British Navy adopted screw propellers in 1845. Brunel built a screw steamer, *the Great Britain*, which made her first successful trip to New York in 1845.

Now, Brunel devoted himself to building bigger vessels. In 1853, he began building the *Great Eastern*. She was six hundred and ninety two feet long and embodied entirely new principles of construction. She was first launched in 1858, and was the ancestor of all the huge commercial and warships of today.

War broke out against Russia in the Crimean Peninsula. The British suffered heavy reverses

Large numbers of the British wounded soldiers were housed in ill-built, ill-ventilated, ill-equipped and ill-provided hospitals. Brunel brought forth his design for military hospital buildings, which was later on copied not only by the Americans but Germans also. During these days of war Brunel the invented a floating gun carriage.

Brunel was, now, famous far and wide. Honours were bestowed on him. He was awarded several honorary degrees. He became a fellow of the *Royal Society* and vice-president of the *Institute of Civil Engineering*. Chiefly his fame rests on his work which has added to the wealth and comforts of the world.

Once, by accident, he swallowed a half sovereign which could not be dislodged from his wind pipe for six weeks. How to get it out was a problem. He himself designed an apparatus to take it out. This appartus did well and the news of his relief was received with joy.

His incessant work had long been undermining his health which finally broke down on account of his work in connection with the *Great Eastern*. While he was watching the engine tests of the *Great Eastern* on September 5, 1859, he had a terrible attack of paralysis which brought his brilliant career to an end only ten days later.

The world owes a great deal to this great designer and builder. He added a great deal to human comfort and happiness by his labours.

GLOSSARY OF WORDS

1. Network—a large number of railway lines going in all directions.
2. Spanned - bridged, connected, joined.
3. Seemingly—looking as if, though not really.
4. Unyielding—stern, that which will not give in, hard.
5. Pioneers—early leaders, first workers.
6. Collective foresight—that sense of wisdom which prompts a man to do a work for the good of the public. Foresight means sense of the future.
7. Accurate—Correct, precise.
8. Reputation—fame, name.
9. Design--plan, blue-print.
10. Supervise—look after.
11. Simultaneously—at the same time.
12. Undermining—Wasting, doing harm.

EXERCISES

1. Use the following in sentences of your own :—

Sympathise with, to win renown, to receive training, to make one's mark. to make a request, prefer, devote oneself to, simul-

taneously, set up, as a result of, break out, bring forth, add to, on account of, a great deal.

2. Distinguish between the pairs of words :— Accept, except; advice, advise; discover, invent ; principal, principle ; career, carrier.

3. Give a brief account of the achievements of Brunel. How have the people been benefitted by them ?

Chapter V.

MISS FLORENCE NIGHTINGALE.

Sickness visits every home. To combat it governments and philanthropists of all countries have built hospitals where patients are cured. They have also set up laboratories where experiments are made to find out cure for the multitude of diseases that prey upon man. In every big hospital you find a band of 'Sisters of Mercy'—nurses—administering to the needs of the patients. Yet only a century back no woman of means had ever the courage to become a nurse. The noble profession of nursing was looked down upon as beneath the dignity of a woman of high birth. Modern nursing and hospital routine are the blessings given to the world by a handsome young lady of high birth who revolted against the social order of the day. She was Florence Nightingale most lovingly called 'The Lady of the Lamp'. Hers is one of the names that will be revered and honoured by men of all times to come.

In the beautiful land of Italy, on a bank of the Arno, there lies a fair city called Florence. It is well known for the abundance of flowers of attractive colours and sweet perfume. Here in this city was born Florence Nightingale, a future heroine of the world, on May 12, 1820. Nightingale is the

surname of the family. Her parents named her Florence after the name of the city.

Her father, Mr. William Nightingale, was a tall and handsome man of high character. He was a landowner of means and had received a high education at Edinburgh and Cambridge. A high education coupled with foreign travels had made him a very broadminded person. He was a great lover of books and art and helped the poor of the vicinity with money at school. But for his philanthropy many poor people would never have received education.

Her mother came of an aristocratic family. She was the daughter of Mr.-Smith who had been a member of the British Parliament for long. She grew up to be a kind and benevolent lady. Florence Nightingale inherited from her father a great many qualities of head and heart.

Mr. William Nightingale, being a man of intellectual tastes, gave his children a wide education. He gave a classical education to his children. From him Nightingale learnt classical languages Greek and Latin, elementary science and mathematics. Mrs. Nightingale looked after the domestic side of her education. She taught her needlework and embroidery. She had the advantage of the supervision of a governess also. During her later years foreign travels made her a woman of broad sympathies and enlightened views.

As a child Florence played with her toys of sorts as most children do. She had plenty of them.

Her dolls were often sick and she played the nurse to them, putting them to bed and feeding them at times from toy cups and plates. She loved small animals and had several pets.

At the early age of ten she once happened to ride across a farm in the company of the vicar. A shepherd Roger by name was running hither and thither in pursuit of his sheep who ran pell mell. "Where is your dog ?" said the young girl to Mr. Roger. "The boys have been throwing stones at the poor beast and have broken his leg," was the reply. Cap, for that was the dog's name, lay groaning in pain at a distance. Florence walked to him. The leg, in fact, was not broken but badly bruised and swollen. She applied hot fomentation for some time till it gave some relief to the dog She returned home after several hours' absence and visited her patient the next day also. The dog got all right and Mr. Roger's gratitude to her was great.

Whenever there was sickness or trouble in the neighbourhood, she frequently visited the cottages of the poor and helped them in their sufferings. Her sweet words encouraged the people in pain and sorrow.

Nursing in those days was looked down upon as a low profession. Nurses were illiterate, uncultured and dirty women of low classes. Sorrow and suffering around her invoked in Florence's mind a desire to become a nurse. She desired to go to Salisbury Hospital as a nurse. How could her

parents permit her to stoop to work so low in the estimation of the people. To divert her attention from such a career her parents sent her away on foreign travels in company of the friends of the family, Mr. and Mrs. Bracebridge. They took her to Rome expecting that she would forget the idea in the glamour of the life at Rome. But that was not to be. She discovered the noble work of the Catholic sisters. For ten days she dwelt in the convent of the Sacred Heart where she studied the work of the organisation. At Kaiserworth in Germany, Fliedner's training school for nurses was doing a very useful work. In 1849, she received training here also. Her work here equipped her with knowledge and zest for her future task. She wrote a booklet on Kaiserworth and spent its proceeds on charitable purposes.

Having qualified herself for this humanitarian work, she returned home. By this time all the opposition to her becoming a nurse had been overcome. Her resolve being unshakable, she was allowed to have her own way. She took up her appointment as the superintendent of a nursing home in Harley Street, London. Not only had she to attend to the organisation of nurses, prescriptions, correspondence and accounts, but also to raise funds somehow or other for the institution. She discharged her multifarious duties simply excellently and won a great praise. Once again she visited Paris, this time in 1853 to study details of the nursing organisation.

The Crimean War broke out in September,

1854. William Howard Russel, the war correspondent of the Times reached the scene of War. Simultaneously with the heartening news of the victory at Alma came reports of the miserable plight of the British soldiers in the peninsula. The correspondent wrote in very strong terms. He wrote,* "The commonest accessories of life are wanting. There is not the least attention paid to decency or cleanliness, the stench is appalling and for all I can see the men die without the least effort to save them." Russel's reports roused the indignation of the British people all over the world. They began to ask, "Are there no devoted women amongst us willing to go forth to minister to the sick and suffering soldiers of the East in the hospitals at Scutari ?

Sidney Herbert, the gifted son of the Earl of Pembroke, was at the War Office and in the cabinet. The country had so much respect for him on account of his irreproachable character that it was said that people would give to Sidney what they would grant to nobody else. He made a rousing appeal to the women of the country and the response was very encouraging. The authorities received numerous applications from women ready to go out as nurses to serve the sick and wounded soldiers of their country.

Mr. Herbert had been a neighbour and old friend of the Nightingales in Wiltshire. He knew full well of the noble work Florence Nightingale had been doing. Florence's qualities of head and heart coupled with the necessary training for the work of

of hospital nursing turned his thoughts to her. He was rather hesitating to ask her but somehow he wrote her a letter appealing to her to go out to Scutari at the head of a staff of nurses.

Florence Nightingale had read the appeal that had gone round in the newspapers and was pondering over its stirring words. Just the same day as Herbert wrote to her, the memorable day of October 15, she offered her services in a letter. Their letters crossed eachother in post. Within a week of her appointment she was able to recruit thirtyeight nurses instead of forty decided upon by her. They were drawn from various classes. There were ten Roman Catholic sisters, eight Anglicans, six nurses from St. Johns House and fourteen from various hospitals of the country. On October 21, under cover of night, they sailed forth. Landing at Boulogne the next day, they took a train. They reached Scutari on November 4, 1854.

The very first round of the hospital convinced her that a drastic[9] action would be needed to set things right. The conditions were terrible. The wards were hopelessly dirty, ill-equipped, ill-furnished and unprovided. There were no beds for the patients. They lay on the bare ground. The only shelter from the winter rains was canvass which dripped badly. Even the ordinary cups, plates, spoons and forks were wanting. There was no regular supply of medicines, bandages, stretchers and splinters, not to speak of eleborate instruments that we find in hospitals these days. Nobody cared for sanitary arrangements. There

were no good arrangements for food and washing. Candles alone lit the wards at night.

That gives an idea of the task before her. Florence studied things and planned measures to improve them. Her resolve to mend matters was firm. Out of chaos she brought order. Satisfactory arrangements for sanitation, kitchen, laundry, supply of garments and drugs were made within a short period of her arrival. Her action was stern and prompt. She sternly warned the inactive and lazy staff. She was at work for twenty hours in the day without ever a frown on forehead or the least indication of fatigue. Ten days of hard labour organised the whole system with the result that not a single groan of a sufferer went unattended to. England was busy making garments, bandages, splints and what not, for those who were fighting on the front.

A great gratifying factor was the sufficient finance to overcome the difficulties in her way. She had been given a large sum while she sailed. Mr. Macdonald placed the Times Fund at her disposal. She received private contributions also. She made purchases of the requirements out of these funds.

A memorable incident took place during these days. The wounded were brought from the battle front in hundreds. The surgeons isolated[10] the hopeful cases from the hopeless ones which were given up and allowed to die without making even the least effort to save their lives. On one occasion Florence saw five soldiers who had been pronounced

hopeless by the surgeon. * "Will you give me these men ?" said Florence "Do as you like with them," was the surgeon's reply. She took charge of them and throughout the night she sat beside them, not only feeding and nursing them but encouraging them by her sweet and gentle words also. The next day they were declared fit to undergo operations. Thus by her selfless devotion to the self-imposed task she saved many a life.

Having worked so diligently at Scutari for about six months, she paid a visit to the battle front of Balaclava. Here she was taken seriously ill. She was most tenderly nursed and cared for. Lord Raglan, the Commander-in-chief, came to ask her health. What was her concern at his coming near her ! She said to her nurse Mrs. Roberts, "Pray tell him I have a very bad fever and it is dangerous for him to come near me." The health and welfare of the Commander-in-chief of her country's forces was dearer to her than her own life.

She had remained in a critical condition for about a fortnight. Shortly afterwards she was convalecent. Her doctor advised an immediate voyage home but she firmly refused and resumed her work a little later.

At length the dark days of war and consequent misery seemed to end. The allied forces made the final assault on Sebastopol on September 8, 1855. The city was evacuated by the enemy the next day. There were general rejoicings at home.

The people at home began to think how best

to express their gratitude to a noble soul who had rendered such meritorious services. Queen Victoria had put this question to Sidney Herbert, the War Secretary and a close friend of the Nightingale. The heroine desired that a fund be raised to found a hospital in London to continue the valuable work she had begun. The inaugural meeting of the Nightingale Hospital Fund collected a large sum of £10,000 which slowly rose to £44,000 when it was closed at the request of Nightingale herself.

Queen Victoria expressed her personal appreciation in a letter that accompanied a brooch[11] sent to the heroine as a reward. The letter runs as follows:—

Windsor Castle,
January, 1856.

Dear Miss Nightingale,

You are, I know, well aware of the high sense I entertain of the Christian devotion which you have displayed in this great and bloody war, and I need hardly repeat to you how warm my admiration is for your services, which are fully equal to those of my dear and brave soldiers whose sufferings you have had the privilege of alleviating[12] in so merciful a manner. I am, however, anxious of marking my feelings in a manner which I trust will be agreeable to you and, therefore, send you with this letter a brooch, the form and emblems of which, I hope, you will wear as a mark of the high appreciation of your sovereign !

It will be a very great satisfaction to me when you return to these shores to make the acquaintance of one who has set so bright an example to our sex. And with every prayer for the preservation of your valuable health, believe me, always, yours sincerely,

'Victoria R'.

Before she left the shore of Crimea, she had a big cross raised on the heights of Balaclava. It is known as the Nightingale Cross dedicated to the sweet memory of those brave soldiers and to those sisters of her band who lay in that far off peninsula.[13]

To express her gratefulness for the noble work the great 'Sister of Mercy' had been doing, the country was preparing to give her a rousing reception when she landed on English soil. On her way home she landed at Marseilles, a port of Southern France. After a brief visit to her old friend she sailed from Boulogne for England. Landing on English soil, she took a train to Whatstandwell, the nearest railway station to her Derbyshire home. She reached her home on August 8, 1856, quite unrecognised by people. How modest she was to escape public attention !

Her health had completely broken down on account of ceaseless work. Her heart had been badly affected and she had fainting fits. The doctors advised a prolonged complete rest but she would have none of it. After a few weeks' respite she had several interviews with both the Queen and the Prince consort[14] in response to the

Queen's invitation she had received in the Crimea. She related to them her experiences and pointed out the defects in the hospital nursing and discussed with them her future plans.

Even though she was in a delicate state of health. yet she studied long and wrote books. Two of them—'Notes on Hospilals' and 'Notes on Nursing'– are considered to be standard works on the subject of nursing, maternity and hospital administration. Countries of Europe sought her advice which was ungrudgingly given. She had to attend to quite a lot of correspondence.

Her illness was slowly sapping her energy. On August 13, 1910, peacefully passed away the greatest pioneer of a noble profession. She was quietly laid to rest on August 20, in the church-yard at Embley Park. The offer of a burial in the Westminster Abbey where the celebrities[15] of England have found a resting place was declined for she had been modest all her life.

Her nation may well be proud of her but the world at large owes her a lot.

For want of modern facilities in hospitals the death rate was very high. Her sincere efforts, careful study, and great resourcefulness[16] have given one of the greatest gift to humanity—the modern system of hospital nursing. Her name will continue to shine like a star. Patient's recovering under the ministering care of the Sisters of Mercy in the hospitals all over the world are a constant tribute to her untiring

energy and faithful discharge of duties taken upon herself, not for any pecuniary gain, but for love and sympathy for the suffering humanity.

GLOSSARY OF WORDS

1. Combat --to fight.
2. Philanthropists —benefactors of the public, generous hearted men, lovers of humanity.
3. Multitude—a number of.
4. Hospital—the place where patients are treated.
5. Century —100 years.
6. Band —a party of.
7. Profession—job.
8. Abundance—plenty of.
9. Drastic --strong.
10. Isolated —separated.
11. Brooch--an ornamental safety pin which ladies wear on their upper garment.
12. Alleviating—lessening.
13. Peninsula—a land bounded by water on three sides.
14. Prince Consort— Prince Albert, husband of Queen Victoria, was called Prince Consort.
15. Celebrities—famous men and women.

16. Resourcefulness—the ability of meeting a situation, shrewd intelligence to solve problems.

EXERCISES

1. Write a short paragraph about the parents of Miss Florence Nightingale.

2. Florence Nightingale gave proof of her inclination to nursing the sick at an early age. Justify it.

3. Describe the condition of the Scutari Hospital as Florence saw it on her first visit.

4. Give a short account of Nightingale's work in the Crimea.

5. What service did Nightingale render to humanity ?

6. Use the following in sentences of your own :—

Look after, in the company of, in pursuit of, in fact, look down upon, in the estimation of, to have one's own way, not only.....but also, coupled with, at the head of, not to speak of, to give an idea of, to place at one's disposal, at length, aware of, as a mark of, point out, to pass away.

7. Change the narration of the passages marked *.

Chapter VI

THOMAS ALVA EDISON

(1847-1931)

Many of you, at least those who live in big towns and cities, have their houses fitted with electric lights. Some of you have gramophones which reproduce the songs of your favourite singers. They reproduce the voice that is dead. There may be few among you who may not have seen a cinema show and heard a film talk. Yet you little know of the man who brought so many comforts and recreations to man. But you must remember that these achievements were the fruit of patient and persistent[1] application to task by a man who is now popularly known as the Wizard[2] of Menlo Park. He was an American, Thomas Alva Edison, by name.

Thomas Alva Edison was born in the state of Ohio in U.S.A. at Melan, on February 11, 1847. His father was a Dutch immigrant[3] and mother, a Scot. When he was seven years old, the family moved to Port Huron in the state of Michigan.

He was sent to school but he did not do well at studies. He stayed there for only a short period of three months and was at the tail of the class. His parents despaired of progress and withdrew him from the school. Since then his mother took his

education into her own hands and did her best for him.

Edison had seen baloons filled with Hydrogen fly in the air. He imagined that a man could fly if he were filled with the gas. He made a servant take a large quantity of Seidlitz powder which produced gas in his stomach. The man was taken very ill and a doctor had to be called in. The sufferer recovered shortly afterwards. Edison received a scolding. This incident shows Edison's eagerness to test by experiments the ideas that came to his mind.

Edison desired to have a laboratory for his experiments. For this purpose he needed money. His parents were too poor to equip[4] one for him. He thought out a plan to make some money to have his desire fulfilled. He applied for a concession[5] to sell newspapers on trains running between Port Huron and Detroit. After the concession had been granted, he began to sell newspapers. This business brought in enough to buy a few chemicals. His experience as a newspaper vendor[6] taught him a great deal more. He soon saw the selling power of news and installed a tiny printing plant in the luggage van of the conductor and produced a newspaper of which he himself was the editor, the printer, the publisher and the vendor. Here in this very van he also set up a small laboratory[7] to carry on his experiments in spare time.

For a period all went well. One day as the train was running, a bottle containing a stick of

phosphorus was thrown out by a sudden jerk. It soon ignited[4] in the air and the coach caught fire. The fire was put out without causing much loss, but the conductor was so infuriated[8] that not only he flung away Edison's laboratory and the printing press but boxed his ears so hard that he grew hard of hearing for life.

One morning, in 1862, as Edison stood on that very railway station, he saw a child playing on the line quite unmindful of a loaded wagon running towards him at speed. He flung down his bundle of newspapers, leaped from the platform and snatched the child clear of the wagon at a risk to his own life. But for the timely help of Edison, the child would have been run over by the train and killed. The child was none else but the son of the stationmaster, Mr. Mackenzie. In gratitude, the stationmaster offered to teach Edison the art of train telegraphy. Edison picked up the art quickly and later on he became a telegraph operator.

During the period of his service as a telegraph operator, he worked very diligently. He had to face several difficulties. He worked as a night operator and had to keep awake the whole night to send an hourly signal to the train despatcher. During the day he was busy with his experiments and thus needed a restful sleep at night. To keep awake the whole night was awful. He contrived a a device which sent the signal automatically at the right time while Edison lay in sound sleep. Rats

disturbed the telegraph instruments. He devised[9] a method by which rats were killed when they touched the instrument. Edison gave up his job in 1867 when he was working at Boston and left for New York.

When he entered New York, he was penniless and hungry. He had no place where to rest his head. For two nights he slept in the battery room of the Gold Indicator Company. On the third day, while he was sitting in the office, suddenly the transmitter broke down. There was confusion all round. In spite of the best efforts of the workers, the machine could not be set in order. Edison requested permission to set it right. The superintendent who was mad with rage desired him to start the work immediately if he could. Edison set the machine in working order in no time. Shortly afterwards Edison was made the manager of the whole plant.

Edison now had enough to set up a business of his own. He opened a workshop in Newark where he manufactured tape machines and their parts. A band of loyal assistants gathered round him. They worked assiduously[12] under their master's direction. During these days Edison worked day and night, sometimes about twenty hours a day. At Newark he married Mary Stilwell by whom he had three children. At Newark he turned his attention to Duplex system of telegraphy. At that time two messages could be sent over the same wire but in different directions (Duplex system). Edison succeeded in sending two

messages over the same wire in the same direction. Later, he invented the quadruplex system. This system was of first rate importance to the businessmen for it saved millions of pounds in the cost of construction. He also made improvement in the typewriter invented by Sholes, which was a little later purchased by the Remington Typewriter Company. He left Newark in 1876 and set up his famous laboratory and workshop at Menlo Park.

By this time Graham Bell had invented the telephone. It needed to be improved and perfected. Edison removed the defects of Bell system with the result that speech was clearly heard.

One of his greatest inventions of this period is the Phonograph. About the end of 1877, he gave a sketch of a model of the machine to one of his assistants who was asked to build the machine, promising to pay him eighteen dollars for the job. The workman wondered what it was going to be. Edison told him that the machine would talk. The foreman of the workshop who happened to be there wagered a box of cigars that it would not. The assistant, however, set to the task and built the machine. While Edison was going to try the machine, many a workman gathered round him. Edison put a tinfoil round the drum, turned the handle of the shaft and shouted into a tube a verse 'Mary had a little lamb'. He placed the record and made a few adjustments in the machine. He turned the key again. Out came the voice of Edison, 'Mary had a little lamb.' The machine

reproduced it. Edison had wrought a miracle. The foreman had lost his wager.

The phonograph astonished the whole world and Edison came to be called "The Wizard of Menlo Park" Now you can have a record of your own speech for a paltry sum. This machine has enabled us to hear and preserve the music and speech of eminent singers and orators.

Next, Edison turned his attention to the problem of electric lighting. Electric arc lighting existed already. There were incandescent lamps but none was satisfactory. Edison's chief difficulty was in constructing the carbon filament. He started work with fifty of his enthusiastic assistants. After experimenting with several metals, he, at last, tried corbonising a cotton sewing thread. A thread was put into a nickle mould which was kept in a furnace for five hours. Then the mould was allowed to cool. The thread broke as it was being taken out.

Yet they were not disheartened. They worked at the job again. They completed another carbonised thread and inserted it in the lamp which was exhausted of air and sealed. Then the current was turned on and the long desired wonderful sight met their eyes. That was on October 21, 1879. Thus was the modern electric lamp invented.

Still Edison had to do a lot of work. He needed generators, so he invented a new type of dynamo. Measuring instruments were wanted;

he invented them also. In fact he manufactured all that was needed for street lighting and when the first station was established at New York, Edison himself was the superintendent, foreman and even gauger[13].

In 1887, Edison moved from Menlo Park to West Orange. Here he made his first motion picture machine called the 'Kinetograph'. A little later he invented the 'Kinetoscope'. In 1912, he invented the 'Kinetophone' which linked the film camera and the phonograph. This made a talking picture possible. Thus you owe your enjoyment from talkies to the great inventor Edison.

A yet greater achievement was in store for Edison. He invented wireless telegraphy by which messages were sent to moving trains. In your own days you find the whole world linked[14] by 'wireless' as you call it. Everyday you receive news from all over the world while you sit in your own drawing room.

During the Great War he became the head of the Naval Consulting Board of the United States. In this field he made about forty inventions which are used not only by the navy of his own country but by the navies of other countries as well.

Edison died on October 15, 1931. He was then a man of great wealth and renown[15]. These he had attained by his keen understanding, patience, perseverance and ceaseless labour. Acquiring great wealth had never been his motive. He had the benefit of humanity at his heart and has given so many gifts to us.

Henry Ford has paid him the greatest tribute. "An inventor", he says, "frequently wastes his time and his money trying to extend his invent on to uses for which it is not at all suitable. Edison has never done this. He rides no hobbies[16]. He views each problem that comes up as a thing of itself to be solved in exactly the right way..... His knowledge is so nearly universal that he cannot be classed as an electrician or a chemist—in fact, Mr. Edison cannot be classified..... The more I have seen of him the greater he has appeared to me—both as a servant of humanity and as a man"

GLOSSARY OF WORDS

1. Persistent - steadfast and determined.
2. Wizard—magician.
3. Immigrant—one who migrates from one place to another.
4. Equip—fit with instruments and apparatus.
5. Concession—favour, grant of premission.
6. Vendor—seller.
7. Laboratory—a room fitted with scientific instruments to make experiments.
8. Infuriated—angered.
9. Devised—invented.
10. Rage—anger.
11. Plant—here it does not mean '*tree*' but '*factory*'.
12. Assiduously—patiently and laboriously.

13. Gauger--a measurer.
14. Linked--joined.
15. Renown—fame.
16. Hobbies—fanciful things that please one as stamp collecting and autograph collection.

EXERCISES

1. How did Edison rescue the stationmaster's son from being run over ? How did the station-master reward him ?

2. Give a brief account of the invention of the phonograph.

3. Briefly describe the invention of the electric bulb.

4. Mention some of the inventions of Edison. Of what use are they to man ?

5. Distinguish between the following pairs of words :--

Emigrant, immigrant; plan, plane; discover, invent; astonish, surprise; sum, some.

6. Use the following in sentences of your own :—

Put out, instal, at a risk, but for, run over, in no time, of first rate importance, turn on, as ill luck would have it, and, in store for.

———

Chapter VII

GUGLIELMO MARCONI

(1874-1937)

You are fortunate in having the benefit of so many miracles of which the people of the last century knew little. Some of them are the telephone, the gramophone, the motor car, the aeroplane and the film. But the most amazing of them all is surely the radio as you call it. Though it has ceased to be a wonder, yet it thrills you all to hear a man speak to the whole world. Today you may switch a button and hear a voice that has flown around the world. The invention has knit the world together. This boon was given to the world by a great worker and inventor, namely Guglielmo Marconi.

Guglielmo Marconi was born on April 25, 1874, at Bologna, a town of Italy. His father was an Italian but mother an Irish. His father was a countryman. Marconi was coached privately at Bologna, Florence and Leghorn.

In 1864, a decade[1] before Guglielmo's birth, a mathematical genius named James Clark Maxwell predicted[2] that in the atmosphere[3] there existed what we now call electric waves[4]. He estimated their properties[5] and velocity[6]. We had no convincing[7] proof and, therefore, his theory was not accepted.

Within a few years of Maxwell's prediction, a brilliant German scientist Rudolf Hertz proved the truth of Maxwell's predictions by a series of experiments. He published his discoveries between 1887 and 1889. Men of science all over Europe were amazed and set to work on the newly discovered rays.

At this time Guglielmo was only fifteen years of age. He took a keen interest in science and was studying with Righi who was a professor of Physics at the University of Bologna. Guglielmo was particularly interested in electrical research and was deeply impressed by Hertz's discoveries. He took to research in this direction. It led him to the idea that the world might have a new and powerful means of communication. And the world did have it as a result of his incessant work. He began his experiments in the summer of 1895 at his father's country house near Bologna.

He improved the instruments used by the contemporary scientists. He continued his experiments with patience and perseverance. One day he connected one side of the spark gap of the transmitter to an aerial wire and the other side to the earth, thus producing for the first time a practical system of wireless signalling. With his collection of small primitive instruments he got marvellous results. He managed to transmit a wireless message for a distance of about a mile. A little later i.e. in 1896, he had increased the distance to two miles. The wireless telegraphy was no longer a dream but a reality. Only the problem of distance remained

to be tackled.

In the same year Guglielmo brought his apparatus to England and immediately got into touch with Sir William Preece who was engineer-in-chief to the Post-Office. Guglielmo gave his first demonstration in England to an assembly of post-office and government officials from the roof of the General Post Office at St. Martin le Grand, London. He gave a demonstration to the representatives of the army and navy also and finally flashed wireless messages across a distance of ten miles. The range of wireless telegraphy was increasing. Guglielmo was determined to conquer distance.

When the news of the achievements of this brilliant son of Italy reached her shores, the Italian Government lost no time in inviting him to conduct his experiments there. A station was set up at Spezia. From it Guglielmo sent messages to warships twelve miles[8] off at sea. In 1897, Guglielmo made tests of his apparatus in the presence of the King and Queen of Italy to their great amazement[9].

In July of the same year a commercial company under the name and style of the Wireless Telegraph and Signal Company was formed in London to develop and further the inventor's work. Three years later the company changed its name to Marconi's Wireless Telegraph Company. Soon the company set up a few stations. In 1898, after a few more experiments, Guglielmo installed the first wireless apparatus[10] on a lightship, the East Goodwin.

The usefulness of the invention was proved within a short period. The East Goodwin was run down by a steamer. The message was flashed at once to the lighthouse. Lifeboats were hastened away to rescue the crew[11] from the fury of the waves and cousequent death. Their prompt arrival saved so many lives. What a noble service to humanity !

Guglielmo was not satisfied with what he had achieved. His first achievement served as an urge to further success. The same year he bridged the English Channel by wireless. Messages were sent a distance of seventy miles. He, now, turned his attention to the conquest of the Atlantic Ocean. He built at Poldhu, in Cornwal, in October, 1900, a long distance wireless with aerial masts which were two hundred feet high. They could not stand the fury of gales and were smashed. He tried a set of shorter masts which were thirty feet less than the original ones. He had to make further attempts. At length he succeeded in raising an aerial to a height of four hundred feet. After the completion of his transmitting station at Poldhu he hurried to St. Johns in Newfoundland across the Atlantic and established a receiving station there. On December 12, 1901, Guglielmo received a wireless message transmitted from Poldhu. The Atlantic was bridged. He continued his experiments for inventing a low horizontal aerial and finally made one after four years of labour.

One day Guglielmo and a few friends had their dinner at a hotel just a few hundred yards

away from the wireless station at Poldhu. When the table had been cleared, Guglielmo placed in the centre of the table an instrument with head-phones for everyone of the company. He connected one end of a piece of wire to the aerial[12] terminal[13] of the instrument and, keeping clear of the heads of his friends, walked round the table. When the wire was in the direction of the transmitting station, they could hear the message being transmitted but when it was at right angles, they could not. Next day they had a demonstration with real aerials and the truth was established beyond even a shadow of doubt.

Guglielmo went on with his work. In 1910, he received a message from Buenos Aires in Argentine, at Clifden in Ireland. The two towns are about six thousand miles apart. Two years later he invented another method of generating[11] continuous waves and, by means of it, he sent the first message to farther off Australia in 1918. Next year his company set up the first broadcasting station [15] in the world.

A worldwide war broke out in 1914. It is known as the First Great War. Guglielmo turned his attention to the usefulness of the wireless for military purposes. During this period of war, he experimented with short waves and perfected the system which is now known as the Beam System. He made an experimental voyage to the West Indies during which he constantly received short wave messages. Thus the 'Beam System' crossed the experimental stage. He proved that a short

wave service to South America was possible.

This war had brought other occupations to Guglielmo besides his scientific work. He served both in the Italian army and navy. He was one of the members of the Italian War Mission to U.S.A. He represented his king at the peace conference in Paris in 1919 and signed several treaties on behalf of his country and in other ways rendered valuable services to the Allied cause.

Guglielmo's inventions won him great honours and respect. He was awarded the Nobel Prize [16] for physics in 1909. In the same year. he became a member of the Italian Senate. In 1929, he was created a marchese. But the greatest memorial to the great benefactor of humanity is his system of wireless telegraphy which has benefited human race in everyday life. Every day every listener and transmitter of the wireless pays a silent tribute to him.

This great man of science died in 1937.

GLOSSARY OF WORDS

1. Decade—ten years.
2. Predicted—made a prophecy. Predict—to foretell a thing.
3. Atmosphere—above the earth there is atmosphere upto 10 miles, thereafter there is atmosphere in which breathing is extremely difficult.
4. Waves—currents of electricity.

5. Properties—nature, composition, constituents.
6. Velocity—speed.
7. Convincing proof—proof which admits of no doubt.
8. Warships—battleships fitted with guns.
9. Amazement—surprise.
10. Apparatus—instrument.
11. Crew—sailors.
12. Aerial—that wire which collects from the atmosphere all the waves present.
13. Terminal—borne at the end or extremity.
14. Generating—producing.
15. Broadcasting station—a station from which radio messages and programmes are broadcast, as for example, The AIR, Jullundur.
16. Nobel Prize—the world's most famous prize annually awarded to the best biologist, physicist, chemist, literary-man and social worker. It was founded by Nobel, a Swedish scientist. From India Rabindra Nath and Raman were the only recipients in literature and physics respectively.

EXERCISES

1. What do you know about the birth and education of Guglielmo Marconi ?

2. Give an account of Guglielmo's demonstration at a hotel.

3. How did Guglielmo's wireless prove useful in saving life ?

4. What is Guglielmo's gift to humanity ? How was he honoured for his invention ?

5. Use the following in sentences of your own:—

Broadcast, transmit, interested in, switch on, switch off, represent, no longer, on behalf of.

6. Distinguish between the following pairs of words :—

Practical, practicable; official, officious; farther, further; doubt, suspect; beside, besides; and journey, voyage.

———

Chapter VIII

ORVILLE AND WILBUR WRIGHT

There is hardly an Indian schoolboy who has not seen an aeroplane fly past over his head at a high speed. In fact aeroplanes are so familiar today that the world looks upon the flights of the aeroplane as commonplace[1]. The world has been knit together by the conquest of air. Mails and passengers are carried from one country to another and from one part to another of the same country. Provisions[2] have been flown to the starving to save life. The aeroplane has proved to be the swiftest means of travel and transport ever known to the world. By the invention of the aeroplane man has realized his age old dream to have wings. In fact he flies faster and longer than a living bird. This is all due to the mechanical genius of two American brothers, Orville and Wilbur Wright.

In the far off New World—North and South America--Europeans settled in large numbers. They cleared the wild forests, brought the clearings under cultivation with valuable crops, built villages, towns and cities, constructed railways and provided themselves with modern amenities of life. The two continents have ever since then been the home of millions of the descendants of these immigrants. Now they take pride in the achievements of their

ancestors and form the wealthiest and perhaps the happiest nation of the world.

Wilbur and Orville were brothers, Wilbur being the elder. They came of a stock[3] of emigrants[4] from Europe. Wilbur was born in Mellvile, Indiana, in 1867. Orville saw the light of the world four years later at Dayton in the state of Ohio, U.S.A.

While they were only boys, they displayed[5] a great skill in engineering. They began the construction of printing machines and cycles quite successfully.

The idea of flying had captivated[6] the hearts of scientists much earlier. Their attempts at flying had failed. A German scientist, Lilienthal, had accomplished long feats of gliding. He constructed a machine. He balanced his machine by the movements of his own body. Herein lay his greatest difficulty. The machine must be self-balanced. Another scientist, Sir Hiram Maxim used steam as motive power for a flying machine. It did not prove successful. The work of these two scientists turned the attention of the two brothers to these problems. They devoted themselves to the task and finally succeeded in surmounting those difficulties.

It was not by a mere chance that they successfully invented a machine. Before setting to the task, they gathered all information that could be available. For this purpose they studied with utmost care the writings of pioneers in the field and

the works of experimenters with machines and at last they had a clear picture of the task that lay before them. This patient and persistent[7] work had given them the most needed information.

Strange was their method. They would study and gather all possible information. Then they would discuss mutually. Wilbur would take one point of view and his brother another. Arguments went on long till one convinced the other of the correctness of his views. It was only then that they proceeded on. In this way they learnt much about pressure of air, secret of balance, the construction of planes with a great lifting power, the best way of gaining initial speed and many more things relating to their task.

They started the construction[8] work in their workshop at Dayton. They constructed a flying machine in which the pilot lay at full length instead of sitting erect. They invented a device to control and keep the balance of the flying machine. It was called the elevator. The pilot could easily control it. To make the flying machine rise higher in its flight or descend, the pilot had only to tilt[s] the elevator to a higher angle or a lower one. Other difficult problems were also solved. The wings of the machine were made warped[9] and the ends flexible[10]. They were connected to the pilot by a wire. When one side of the machine became depressed, the pilot could lift the edge[11] on that side and the machine would right itself. It was a revolutionary[12] discovery. Now the conquest of the air was only a matter of time.

In 1900, they took their flying machine to Kitty Hawk, North Carolina and made several trials. They believed that they were on the right track and adjustment followed adjustment[13] They seemed to be near the achievement of their ambition. The next step was to fit the flying machine with power. The automobile[14] engine was much too heavy. The Wrights set to work and produced a motor consuming petrol. It had four cylinders and two propellers and developed fifteen horse-power energy.

December 17, 1903, was a red letter day in the history of the world. On that memorable day the flying machine of the Wrights was taken to a field in Kitty Hawk. They placed it on a device[15] which they had constructed to give it initial speed. The motor was soon fitted. The two brothers tossed to decide who should have the first try. Wilbur lost to Orville who mounted the flying machine. Wilbur started the propeller and pulled the cord that released[16] the machine. The machine rose from the ground and moved wildly in currents of the wind which was blowing at the speed of twenty seven miles an hour. It flew for only twelve seconds and covered a hundred and twenty feet only. For the layman it was a hardly a flight but for the inventors it was a triumph. Wilbur took his turn immediately after Orville and remained in air for only fifty nine seconds – not a minute. He covered a distance of eight hundred and twelve feet. His was a much greater triumph than his brother's. For the first time in human history a power driven heavier-than-

air machine had travelled through space. Men had flown as if they were birds. The Wrights set to preparing a stronger machine. They shifted their workshop to Huffman Prairie, eight miles east of Dayton.

Europe knew little about the trial flights of the Wrights. Only rumours crept out but people would not believe them. The Wrights now decided to give the world an insight into their work. They invited fifty newspaper reporters to witness a trial flight. The reporters doubted the possibility of a flying machine but, out of curiosity, they did come. The wind being unfavourable, the engine would not work properly. The reporters went away disappointed. Some of them came the next day also but this attempt also failed.

Their failure did not discourage the Wrights. On the other hand, it made them work more diligently. They went on with their trial flights. The length and duration of their flights increased steadily. They never boasted of their achievements and worked incessantly to perfect their machine. They talked little; worked a lot. *"If I talked a lot," said Wilbur, "I should be like the parrot, a bird that talks most and flies least."

In 1904, these continual trials resulted in a flight of twenty miles. Wilbur described it in a letter to a friend in London, Patrick Y. Alexander who read it out to the London Aeronautical Society. This letter created a sensation in the capital. People

would hardly believe in such an accomplishment. In America, however, their experiments and flights were watched by large crowds of amazed onlookers.

Next year the Wright brothers gave up flying and devoted themselves to perfecting their machine. They wound up their bicycle business to bring their new invention to a finish. They carried on research in the laboratory and made technical improvements in the machine until 1908 when they gave the world a perfect flying machine.

During their absence from the field Europe witnessed a great progress in flying. Several men of genius were at work but the American brothers were much in advance of their European compeers. In 1908, a commercial syndicate was set up to negotiate with the U. S. A. Government. Orville satisfied the U.S.A. Government with different tests. In one of these test flights the machine met with a fatal accident. One of the propeller chains broke and the plane crashed to the ground. Lieutenant Seefridge, an army officer, who was flying with Orville, was killed but Orville had a narrow escape though he received severe injuries.

The same year Wilbur sailed to France where a French syndicate had interested itself in the venture of the Wrights. Wilbur began his flights on August 8. He improved upon the flight of the previous day to the amazement of all. Within a month, on September 6, he remained in air with a passenger, an hour and four minutes. On December 18, Wilbur

flew in the air for two hours without a break and climbed to a height of three hundred feet, a unique achievement at that time.

World was now interested in aviation. The achievements of the Wrights formed the front page news of the newspapers of the world. Huge crowds gathered to see them fly. The kings in Europe came to France to see the great marvel—aeroplane.

The Wright brothers gave up flying to take up the manufacture of machines and the training of men. They did well and made a great deal but Destiny willed otherwise. Within a short period of four years after his success Wilbur was taken ill with a fell disease, typhoid fever, which brought about his end on May 30, 1912. Wilbur was a very simple, careful, patient and pains taking man. During the period of his experiment at flights in France, he slept in a cot by the side of his beloved machine. The only furniture he had was only a table and a chair. The world may well be proud of a benefactor of humanity like him.

Wilbur's death caused a shadow of sadness on on his brother's life Shortly afterwards, however, he overcame his sadness. Flights much more wonderful have since become a reality.

Men have harnesssed the invention to the service of humanity ever struggling on the way to progress.

GLOSSARY OF WORDS

1. Commonplace—very ordinary, nothing remarkable.
2. Provisions—food.
3. Stock—family.
4. Emigrant—those who migrate from one country to another.
5. Displayed—Showed.
6. Captivated—charmed, attracted.
7. Persistent—steadfast and diligent.
8. Tilt—raise.
9. Warped—twisted.
10. Flexible—adjustable.
11. Edge—end.
12. Revolutionary—new and full of consequences.
13. Adjustment—improvement to suit a particular purpose.
14. Automobile—the motor that moves itself.
15. Device—a mechanism.
16. Released—freed.
17. Destiny—God, fate.
18. Harnessed—utilized. put to use.

EXERCISES

1. Describe the first flight of the two brothers.

2. Write a short note on the benefits the invention of the aeroplane has conferred upon man.

3. Change the narration of the passage marked*.

4. Use the following in sentences of your own :—

Look upon, in fact, due to, take pride, come of, see the light of, to devote oneself to, invent, discover, relate to, at full length, a matter of time, energy, to take a turn at, as if, boast of, give up, take up, carry on, to the amazement of, bring about, shadow of sadness.

———

Chapter IX

ELIZABETH FRY

(1780-1845)

'There are black sheep[1] in every society and country. Each country, therefore, makes laws for its people. Those who break the laws and commit crime receive punishment prescribed by law. Obviously the idea of punishment is to reform the law-breaker and bring him back into society as a useful and law-abiding citizen. To check him from further nefarious[2] activities and in order to reform him, he is separated and confined to jail where efforts are made to mend him during the period of the sentence. Though it cannot be said to what extent the present day prisons succeed in their mission, yet they are considerably better than they were in the last two centuries. This improvement the world owes to lady Elizabeth Fry, most lovingly called 'the Genius of Mercy'.

Elizabeth Fry, a faithful and bold worker in the cause of humanity, was born in 1780 at Earlham to a wealthy banker, Mr. Gurney. She had all the benefits that wealth can confer on man—easy and comfortable life, joy and fun, music and dancing and what not[3] ? She had eleven brothers and sisters, all brought up in the lap of luxury. As she

grew up, a change came over her. Somehow she developed a distaste for all kinds of amusement.

In 1897, when she was still in her teens a simple incident proved a turning point in her life. A certain American preacher, William Savery, delivered a sermon in the Earlham Hall. She was among the audience. She listened to him and was so deeply impressed that she made up her mind to give up her luxurious ways and lead a simple and useful life of service to the the less fortunate people. She discarded costly garments, ornaments, music, dancing and even rich diet. It was more than her father could bear. He wanted to win her back to the usual life of ease and comfort but in vain.

She desired to visit London. Her father acceded to her request as soon as it was made. Here she was attracted by the glamorous life of the metropolis. She painted her face and visited the play. But after a time she was convinced that public amusements promoted evil. Her experiences of the life in London made her a future benefactor of humanity. She returned home all the more determined to be a plain Quakeress devoted to service of mankind.

Mr. Gurney was himself a Quaker but he did not approve of the rigid code of his youthful daughter's life. All attempts of Elizabeth's brothers and sisters failed to turn her from her purpose. There was some friction in the family. At last Mr. Gurney made up his mind to marry her off.

Another Quaker, Mr. Joseph, was a wealthy man of London. He fell in love with youthful Elizabeth who was very shy. Mr. Gurney invited him to Earlham with a view to encouraging the match. It was after a great deal of persuasion that she accepted him. They were married in 1800. She went to London to live in her husband's home. They were devoted to each other.

Not long after her arrival in her husband's home, Elizabeth started visiting the poor in London. She arranged schools and distributed clothes and food to the poor. She also began to address meetings. Her sweet voice and convincing arguments impressed her audience deeply. This stood her in good stead in her later years when she devoted all her attention to jail reforms.

Jails in those days were dark, dirty, and ill ventilated underground cellars where all sorts of criminals—murderers, debtors and pick-pockets—men, women and children were herded together like goats and sheep. * Life in prisons promoted crime rather than lessened it for wine was sold to those who had money to pay for it. Jailors were bribed. Hundreds died of starvation and fell diseases caused by unhealthy conditions of life. Punishments were appalling inasmuch as in 1833, a boy of nine was condemned to death for poking a stick through a glass pane and stealing tubes of paint worth two pence.

Elizabeth visited the Newgate Prison in 1813. The sight she saw was heart-rending. She found three hundred women with their numerous children

—sons and daughters—lying about on the floor. In one corner she saw an ugly, grey haired woman holding a bottle of wine and hurling all sorts of abusive language at others. In another corner she found two women fighting like tigresses. They had scratched each other's face so cruelly with their nails that both were bleeding. They had torn each other's clothes. Close by lay a woman tossing and moaning on a bed of straw with high fever. Nobody seemed to heed her trouble. At a distance she saw two women stripping a dead child for rags to put on a boy of four or five years playing by their side. What a dreadful sight! *"Would these children, brought up under these unhealthy conditions, be the future citizens ?" she asked herself, "Are not jails turn ng out worse criminals than those whose crimes they want to put an end to ? Can nothing be done for these innocent children who were in jails for the crimes of their parents?"

Elizabeth's mind was made up. She advanced and picked up the child affectionately. The child began fingering her gold chain and held her hand. * "Friends" ! she said, "Many of you are mothers; I, too, am a mother. I am distressed for your children. Is there not something we can do for these innocent little ones ? Do you want them to grow up and become future prisoners themselves ? Are they to learn to be thieves and worse ?"

Her appealing words had a magical effect. The hatred and hard looks in their eyes at the first appearance of the visitor had suddenly changed

into affectionate gazes. They sobbed and fell on their knees all around her. They kissed her hand and offered her a chair. They related their woeful tales which the simple Quakeress heard patiently. To her joy, the visitor found an urge for reform in the hearts of the criminals. Her business was to develop that feeling and give it a practical shape.

With a committee of twelve women, she devoted herself to the task. She separated children and made arrangements for them. The committee lived almost at the prison. Their labours were fruitful. After a time the prison exhibited the appearance of an industrious factory.

In 1817, Elizabeth Fry founded an association for the improvement of prisoners of the Newgate prison. The objects of the association were separating prisoners of both sexes, classifying them, engaging lady superintendents for the supervision of women prisoners, giving secular and religious instruction and gainful employment. The association succeeded only to a certain extent. Their example was followed by other institutions in the country. Her noble work was appreciated by the House of Commons. The public was now awake to the need of prison reform with the result that there was gradual improvement in prison life throughout England, Ireland and Scotland.

Australia was a settlement for English convicts. They were transported from their mother country to New South Wales in Australia. There were no regulations for these voyages and no

arrangements for them in the new surroundings. Elizabeth's attention was drawn to the awful condition of the convicts. She induced the government to make proper regulations for the voyages and provision for homes and employment for the convicts.

In 1920, she devoted her attention to the improvement of the pitiable condition of beggars and destitutes. She started a house and a kitchen for the homeless of London. She founded a similar home at Brighton a little later.

Her work had awakened the governments beyond the English channel. Correspondence passed between Dowager Empress of Russia and Elizabeth Fry. The former instituted reforms based on Elizabeth's advice. Letters poured in from other countries seeking her advice on matters of jail reform. These letters emboldened Elizabeth Fry for travels abroad. She visited France, Switzerland, Prussia, Netherlands and Belgium. She inspected the prisons in those countries (of course, with the permission of the authorities) and studied the life of prisoners. In those days most of the journey was covered by coaches. She won the sympathies of the King of Prussia who was so much impressed by her that he visited her in her own home four years later when he came to England.

Elizabeth's health was failing fast. Sorrow caused by the death of several of her children had impaired her health. Incessant work was also responsible to some extent for the breakdown. She developed an illness which brought about her

end on October 12, 1845.

The work of a simple, unassuming and silent humanitarian has opened up a new field. It was a triumph of a noble cause. Authorities of prisons now attempt to change the outlook of the prisoners on life and win them back to healthy ways by persuasion, education, and profitable employment under healthy conditions of life with the object of making the prisoners law-abiding citizens.

GLOSSARY OF WORDS

1. Black sheep—of bad character, disreputable member of a family or group.
2. Nefarious—extremely bad, vile.
3. What not—so many other things.
4. Stripping—taking off.
5. Correspondence—letters.
6. Reform--improvements.

EXERCISES

1. Describe the conditions of jails before Elizabeth Fry reformed them.

2. Describe Elizabth Fry's life during her visit to London ? What was its effect on her ?

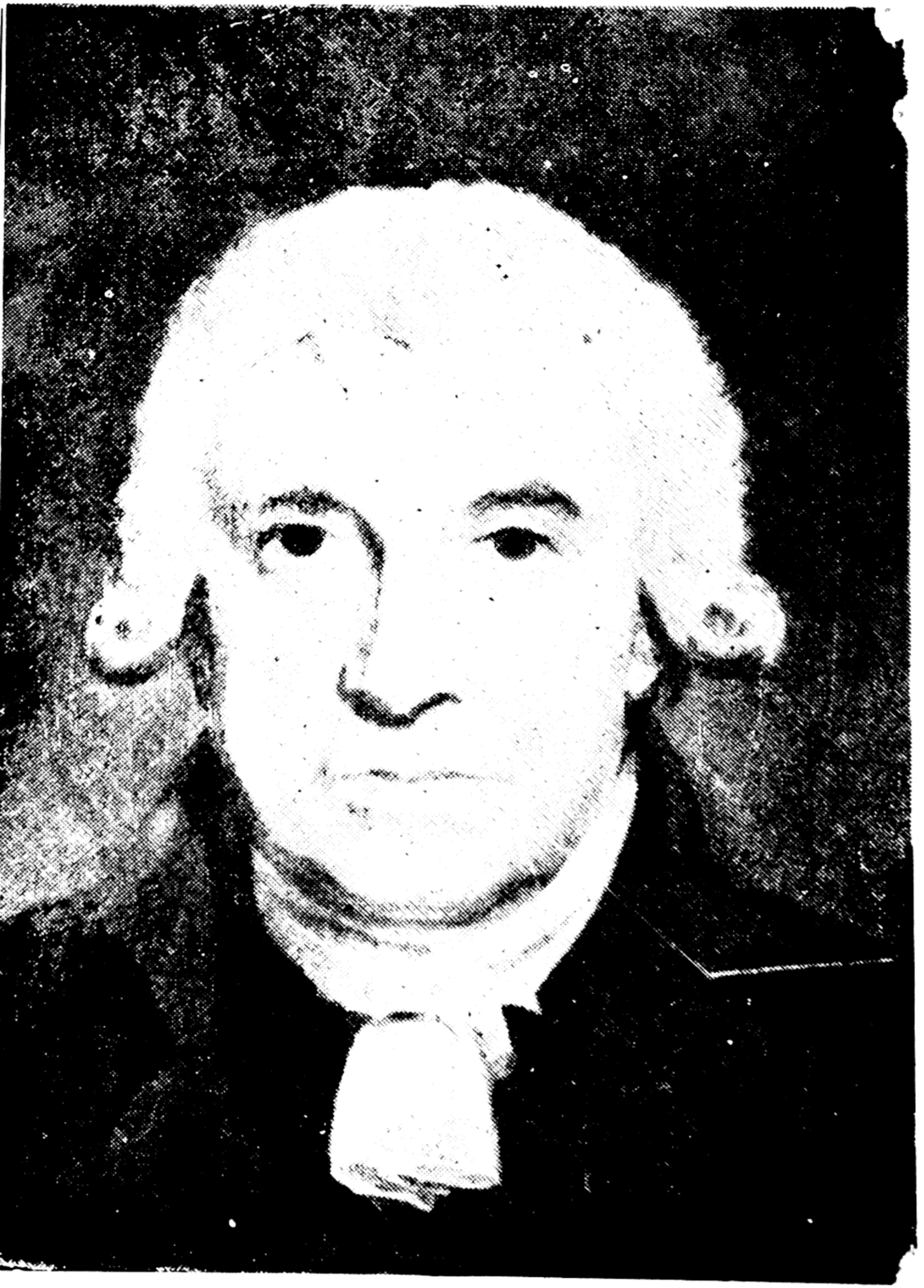
3. What was the condition of jails in the days of Elizabeth Fry ? How did she reform them? Describe Elizabeth Fry's visit to the Newgate

prison. What effect had the visit on her mind ?

4. Use the following in sentences of your own :—

Confer upon, to make up one's mind, turning point, to win back to, with a view to, to fall in love with, in vain, in the lap of luxury, to stand in good stead.

5. Change the narration of the passages marked*.



Chapter X

JAMES WATT

(1736-1819)

We live in the age of electricity. Electricity runs our mills and grinds[1] corn. It spins[2], weaves[3] and knits[4] garments[5] for us. It serves us in the kitchen. It does the washing, drying and pressing for us, the human hand of course, being indispensable[6], though playing a minor role. Before this source of power was known to man, he depended mainly upon steam power. Steam as a source of power was known to the world long before but little practical use was made of it in life. It was James Watt who first perfected a steam engine. Later on, people put it to numerous uses. It was used to pump and work mines, to drive machinery in big and small factories, to dig tunnels, to build houses and to transport goods over the sea and land. It was one of the most valuable contributions to the service of humanity.

James Watt was born at Greenock on the Clyde, in 1736, in a village of Scotland. His father owned a small workshop. The child got opportunities of using his hands, making a small set of tools[7] and manufacturing several small things with them. He used his hands so deftly that the

workmen in his father's workshop remarked that he had a fortune in his fingers. James picked up very cleverly what the workmen could teach him.

When he grew up, he decided to learn making mathematical instruments which required greatest care. Since training in this craft could not be had at home in Greenock, he had to travel to London on horseback, for there were no railways in those days. The journey took him twelve days. In the big city he had no friends to guide or advise him. He had to go from one instrument maker to another seeking to learn the trade. Few were willing to take him. At length he found a manufacturer who took him as an apprentice and paid him eight shillings a week. With this paltry sum, James managed to live for a year during which he worked very diligently and learnt as much of the trade as took others about seven years.

Now he wanted to set up an independent business at Glasgow, a very important port of Scotland. Here he had to overcome many difficulties before he was able to open a shop in the grounds of the Glasgow University. Students and professors visited his shop and became his customers.

In the University laboratory there was an engine worked by steam. It was called the Newcomen engine after the name of the inventor who was a blacksmith. The engine went out of order one day and was packed off to London for necessary repairs. It was received back and tried but would not work. The professors were perplexed. One of them said,

"Let's see if James Watt can do something." At the suggestion of the professor, the engine was given to Watt for repairs.

Here was an opportunity for him. He unscrewed the engine into parts and examined them closely. Soon he discovered what was wrong with it. He rebuilt the engine which worked satisfactorily. In the course of this task, he had an idea that he could manufacture a better engine which would do far more work and would not go out of order so often.

Shortly afterwards, he gave a practical shape to his idea. He built a little model[8] steam-engine and watched its working. It gave Watt entire satisfaction. Later he made a big engine. He had to face a great many difficulties for all the components had to be made by hand. There were no machines as we have now, to manufacture them. His perseverance overcame them all. He worked day and night for about four years. He tried the engine over and over again but failed. He never despaired[9] and continued his efforts till he succeeded at last.

This engine was a little wonder of engineering, for it effected a saving of three quarters in fuel consumption and did far more work. At Peacewater where the first engine was set up, it emptied the mine in seventeen days while the old engine would have taken several months. Watt had to make several improvements before it worked perfectly well.

Now Watt turned his attention to the commercial side of the enterprise. Fortunately, two businessmen——Dr. Roebuck and Boulton——helped him with money. Boulton became a partner of Watt's and it was due to his business acumen that Watt's firm had a flourishing business. Robert Fulton, the American designer of the first steamship, made use of the steam engine manufactured by Watt's firm. As time passed, Watt's engines began to be used all over the world for various purposes.

Watt retired from active business life at the age of sixty four but his inventive mind continued to work in the field of invention. His last invention was a machine for copying sculpture. He died in 1819 at the age of eighty three and found a burial place in the Westminster Abbey where great Englishmen lie honoured. He is called the father of the Industrial Rovolution. By his gift of the steampower, he revolutionised[10] industry and added to the comforts of the human race.

GLOSSARY OF WORDS

1. Grinds—crushes into powder.
2. Spin--to spin thread as we do in a charkha.
3. Weave--to arrange threads to make a piece of cloth.
4. Knit--to join together threads as in the case of woollen clothes.
5. Garments--dress.

6. Indispensable-- unavoidable.
7. Tools--instruments.
8. Model--the best, the ideal.
9. Despaired--gave up hope.
10. Revolutionized--entirely changed.

EXERCISES

1. In a short paragraph give an idea of the training James Watt received.

2. What is the greatest invention of Watt ? Of what service is it to us in modern times ?

3. Use the following in sentences of your own :–

Depend upon, a little, little, to pick up, over and over again.

4. Give the antonyms of :–

Own, necessary, satisfaction, practical, empty, active.

CHAPTER XI

GEORGE W. CARVER

(1864-1943)

"In human ability[1] there is no colour line." Man should realise that God is the common father of all. It is a pity that man in his pride and folly forgets this and treats his fellow brother as if the latter[2] is his inferior[3]. Through ages the black races have been subjected to hard treatment. Few of us would believe that amongst them too there are and have been great persons who have lived nobly and done great deeds. Of course, it was a rare thing if any of the slaves rose to great heights of intellectual achievement or material success. But success is nobody's monopoly[4]. It comes with mental alertness[5] and opportunity. Above all, it requires patient industry and faith. How a genius of a man, from the lowest position of the ladder rose, by dint of his virtues, to the highest and applied his faith and tireless energy to the solution of agricultural problems is a story well worth reading.

George W. Carver belonged to a poor Negro family of United States of America. His skin was a bar[6] but not an insurmountable[7] bar to his genius. He helped create a new system of raising increased

crops at a time when the world needed crops very badly. He astonished American scientists by inventing at least 100 by-products[8] from the simple pea-nut[9]. You will not understand the significance of this unless the thing has been explained to you.

George W. Carver was a coloured Indian. Such men in America are generally known as negroes or blackmen. Before slavery was abolished, negroes were extremenly ill-treated. Nearly all the negroes were slaves. Whoever possessed them, exploited[9] them. They were purchased for their whole life. Their masters could and did employ them in all sorts of killing jobs. Above all, they were not regarded as human beings possessing souls, but were looked down upon as beasts or brutes. Often they were beaten mercilessly to death. For centuries they remained depressed. Only a very few could rise. Their Christian masters often converted them to Christianity. In course of time, they forgot their mother tongue and adopted English.

George W. Carver was born in 1864 in a Negro family in the border state of Missouri, U.S.A. Those were exciting years—the years 1861, 1862, 1863, and 1864—the years of American destiny.

During the Civil War (1861-65), the state of Missouri was the centre of guerilla[10] fighting. A great Civil War had broken out. President Abraham Lincoln tried to abolish slavery. He wanted to set these Negroes free and declare the system of slavery as illegal[11] in America. But good work is always opposed. So those who wanted slavery to

continue declared War on him and America became involved in a bloody Civil War. It was during these exciting days that George W. Carver was born.

Imagine, now,the horror of it that at night, a party of guerillas had carried off baby George and his mother. There was a night raid on the village and the soldiers had taken to plundering and abducting[12] persons. Luckily, the child was found unharmed. He grew up and lived to be known as George W. Carver.

At an early age, Carver left his farm home to study in a nearby town. There was a kindly woman,---Aunt Mariah, they called her. She was deeply religious. She took charge of George and gave him a training that she liked best.

She kept George under careful observation and taught him the virtues of self-restraint and faith.

Indeed, in her company and by her association, Carver became not only intellectually sharpened, but also spiritully alert. He read as well as worked. Working in the farm, he learned the dignity of labour. He also earned a small income but by his thrifty habit, was able to save something which stood him in good stead.

Thus at the age of 26, Carver had saved enough to get admission into a small College. He paid his living expenses by doing laundry work for other students. How many of you would be prepared to do this ? It is good to be self-reliant,

no matter at what age. Carver had learnt self-reliance.

He was not ashamed to do menial jobs to earn a living and pay for his studies. Soon he discovered that he had a talent for painting. Should he turn a painter ? What benefit can be-rendered to the world by painting pictures ? The world needed hard work. Something 'useful' must be learnt. The world cried for food. There was depression in agriculture. Food prices were going up. Cultivation was yielding[13] decreasing returns.[14] Weeds and worms ate up the plants. The farmers groaned as they suffered great losses.

Carver knew his mind well. And that was a big thing for him. He knew that art was his favourite subject. He also knew that his talent was for giving shape to figures of beauty. *One day Aunt Mariah asked him, "Mr. Carver, would not you like to make a career of art ?" "No, Ma'am" was the instant reply. Aunt Mariah was surprised. She had studied Carver for a pretty long time, but never had seen him so quickly decisive on a delicate question which deeply touched him. "Quick and correct decision."—That was the magic key that Carver possessed and whoever amongst you would cultivate this virtue and apply it in life will succeed.

*"No, Madam" replied Carver to Aunt Mariah, "I feel, I can be of more service to my race in agriculture." So Carver remembered not his personal likes and dislikes but his duty.

He was an excellent student of art, yet he would not take to art as his life-work. His life-work, as he thought, should be agriculture. Agriculture, by which humanity lived and millions of negroes worked their living, attracted him more than anything. Of course, he did not give up painting. He kept it as a hobby.

In 1891, Carver entered an agricultural College where he did research work in plant diseases. He was soon recognized as a leading scientist of the soil. Several large schools wanted Carver for a teacher but he accepted the invitation of the great Negro leader, Booker T. Washington, to lead the agricultural department of the Tuskegee Institute in the State of Albama. The agricultural states of southern United States then depended on one crop, namely, *cotton. The farmers did not know how to take good care of the soil. Carver was a good teacher. He knew how to stir the minds of students to make them think. "You cannot teach people anything," he used to say, "you can only draw out what is in them."

The illiterate and ignorant farmers did not know how to make the best use of their farmyards. Carver told them, "If you farmers change crops, you can make a better living." Land was formerly subjected to one kind of crop. The result was that if the crop failed, the whole enterprise was lost.

So Carver advised them,* "Do not depend entirely on cotton. Raise sweet potatoes too. They are easy to grow and they do not take too

much part of the soil". How one feels this advice was given to the Indian agriculturists also.

On account of his research work, Carver was now made a Doctor of his subject. So Dr. Carver taught farmers to rotate their crops and urged them to turn the soil over instead of burning off the fields after a harvest as was the practice. Dr. Carver discovered new varieties of cotton and increased the sweet-potato yield eightfold. The Philippines, China, India and other lands asked his aid in fighting plant diseases. He could have become wealthy, but he was only interested in helping the farmers.

In 1921, he was called before a committee of Congress to speak on tariff[15] aid for the infant pea-nut industry. Given only ten minutes to speak, he held the law-makers spellbound for two hours while he showed them some of the hundreds of products he had created from pea-nuts, namely, foods, dyes, paper, milk, ink and many others. Who ever knew that the simple innocent looking seed of a plant could produce so many valuable things ? Carver was glad for the things he had discovered, but he was not proud of his knowledge.

He knew he was in the hands of God Who used him as His instrument. He once said in deep humility "I discovered nothing. I am God's agent —the instrument throuh which He works."

During World-War II, he taught the army aviation[16] cadets[17] how to survive on plant life in

jungle country. Many honours came to him in his last years. He was honoured by a great University. While paying tribute to his valuable work and service to humanity, the President of the university said, "Dr. Carver, you have demonstrated[18] to the world that in human ability, there is no colourline[19]."

It is well to remember that.

GLOSSARY OF WORDS

1. Ability—capacity to do a thing and undo a thing.
2. Latter—one that is last mentioned. 'Latter' implies the existence of 'former',e.g. Ram and Shyam were going to the College, the former was a student of the first year class while the latter was a B. A. student.
3. Inferior—less than, not equal to in quality; Opposite of superior.
4. Monopoly —a trade in which a person has sole right and in which no one can participate or compete with him.
5. Alertness—attention, readiness.
6. Bar—obstacle, opposition.

7. Insurmountable—that which cannot be surmounted or overcome. A great difficulty.

8. By-product—side product.

8*a*. Pea-nut—ground-nut, मूंगफली.

9. Exploited—used them too much for their own purposes.

10. Guerilla—irregular soldiers, guerilla fighting —by irregular soldiers in the form of raid (not pitched battle)

11. Illegal—not according to law.

12. Abducting—stealing human beings, carrying off men and women from their lawful residence.

13. Yielding—giving.

14. Return—result, production.

15. Tariff—tax, duty.

16. Aviation—'relating to flying', airforce.

17. Cadets—newly recruited officers in training.

18. Demonstrated—Shown.

19. Colourline—Colour distinction, difference between a black negro and a white American.

EXERCISES

1. Write in your own words the story of George W. Carver's life.

2. What moral do we learn from his life and work ?

3. Use the following in sentences of your own—latter, return, illegal, on account of, decisive.

4. In what way is Carver a benefactor of humanity ?

5. Change the narration of the passages marked*

———

CHAPTER XII

WILLIAM WILBERFORCE
(1759-1833)

All men are equal in the eyes of God, why should they be unequal in the eyes of man ? No person of any nationality[1] has, a right to make another a slave of his nor has a particular race[2], howsoever advanced, any right to enslave another race, however depressed.[3] Yet, there was a time, when European settlers in the West Indies, South America and North America carried on a notorious[4] trade in men and women. There were people who raided parts of Africa, terrorised the natives and chained them as prisoners. Shiploads of such men were transported to the growing towns of new colonies and sold there like cattle. The unfortunate people were called the slaves of their owners. The owners looked upon them as their property which might be disposed of in any way they pleased. The owners made them work like beasts. Yet at the end of their day's labour, they would not be provided with a square meal. No one even questioned them if they tortured or killed one of their slaves. To remove this social injustice was indeed a hard task because, as we know, 'customs die hard'. An Englishman in the nineteenth century rose in a moral protest against this evil. It was he who applied his energy

and resourcefulness to end this social and moral evil. It is a story of self-devotion to a cause and single-mindedness of purpose. By sustained agitation, he managed to rouse the consciousness of his countrymen to this grave social injustice and brought about its end by a legislative[5] Act. His name is William Wilberforce.

William Wilberforce was the son of a flourishing Yorkshire merchant who carried on a thriving trade with states on the shores of the Baltic sea. He was born in 1759. He was brought up as the sons of the rich generally are. At the age of seven, he was sent to school at Hull, a flourishing seaport of the east coast of England. At his father's death which occured in 1768, he was taken to his uncle's where he joined another school. A little later, he was brought back to Hull and completed his school education there. For higher studies he went to Cambridge, a great seat of learning. He did quite well there though he was not diligent. He completed his education in 1780.

He decided to give up his business and enter public life. The general elections took place in the same year. He was put up for Hull and was elected though he had to spend a lot. He had to shift to London and fitted into the London clubs as a candle fits into the socket. He gained much popularity for his charming manners. He made friends with many highly placed people, most renowned of them being Pitt who, later on, became

the Prime Minister. In 1783, they went to France and were presented to the King and the Queen.

In London, he became a member of many social clubs. But the travels of the family in 1785 into many countries of Europe in the company of a great religious leader, Reverend Isaac Milner made him a completely changed man. He became an Evangelist *i.e.* a christian philanthropist, and spiritualist and led a strictly religious life.

By this time the question of slavery had attracted the attention of men of thought and foresight. The treatment meted out to the slaves had roused their indignation[6] and some of them were out to do away with this grave social wrong. As far back as 1772, Mr. Granville Sharp had won a law point that a slave became free as soon as he set his foot on English territory. In 1787, a committee of the opponents of slavery was set up to work for its abolition. On the advice of his friend, Pitt, the Prime Minister, Wilberforce took up the question of slavery in the Parliament. Soon he became the leader of the campaign in Parliament.

For years, he worked patiently, collecting evidence against this social injustice. In 1791, he asked leave to move a bill for the abolition of slavery. He suffered a defeat. Now, public meetings were organised and there was an awakening in the masses. In 1795, he again sought leave to introduce a bill for the abolition but it was again refused. For the next five years, the agitation went on unslackened.

Wilberfoce was a man of charity. He was helping many poor people with his money and giving ungrudgingly for charitable causes. He started the society for bettering the condition of the poor in 1796. He helped in founding the Sunday schools and founded the Church Missionary Society. By 1801, he became generous to a fault, for he spent about £3,000 over and above his income in the same year.

Wilberforce, with the help of another gentleman, Zachery Macaulay, (father of the famous Lord Macaulay) who felt keenly for these wretched slaves founded a colony at Sierra Leone. It had a population of 1,100—all slaves. They built houses, a school for their children and grew their own food. Thus sprung up a new town called Freetown. For some time Macaulay lived there and managed everything. Then he sailed for home.

In England too Macaulay had a lot of work to do. Both Wilberforce and Macaulay toured the whole country telling the people about the miserable plight of slaves. Year after year, Wilberforce brought in a bill for the abolition of slavery. Though it was passed by the House of Commons, yet there was a vehement opposition in the House of Lords. It was thrown out.

The year 1907 was a momentous year. By this time, Wilberforce had created public opinion in favour of the bill. On February 23, the bill to stop slave trade was passed by a vast majority. Only

sixteen members opposed the bill. It received the royal assent on March 25.

Wilberforce was not yet satisfied. He continued agitating. On his appeal; the Anti-Slavery Society was formed in 1823. Finally in July, 1833, he moved a bill for the emancipation of slaves. He heard the second reading of the bill but before the bill was passed, Wilberforce died on the 29th. The bill received the royal assent next month. He was given a burial in the Westminster Abbey.

In other countries too, slavery was opposed tooth and nail. Practically it has died in all countries. The world owes the end of this social injustice—slavery—to this great Englishman—Wilberforce.

GLOSSARY OF WORDS

1. Nationality—national character.
2. Race--a peculiar breed, the descendants of a common ancestor; one of the distinct varieties of the human species.
3. Depressed—dejected.
4. Notorious—infamous, disreputed.
5. Legistative Act—a law made by the law-making body oi the country.

6. Indignation —extereeme anger caused by a sense of injury or injustice ; contemptuous hatred of what is mean or base.

EXERCISES

1. Write a short paragraph on the early life and education of Wilberforce.

2. When did Wilberforce become a member of the Parliament ? What efforts did he make to end the evil custom of slavery ?

3. Who was Macaulay ? How did he help Willberforce ?

4. Use the following in sentences of your own:—

Look upon, dispose of, a square meal, to make friends with, to do away with, set foot on, spring up, in favour of; tooth and nail.

5. Distinguish between the following pairs of words:—

Elect, select; refuse, deny; momentous, momentary.